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REPORT

ON

INTRODUCTION OF DOMESTIC REINDEER INTO ALASKA,

WITH

MAPS AND ILLUSTRATIONS,

BY

SHELDON JACKSON,

GENERAL AGENT OF EDUCATION IN ALASKA.

1893.

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, January 9, 1893.

SIR: In compliance with a resolution of the Senate passed January 6, 1893, directing that the Commissioner of Education transmit to the Senate a copy of the latest report of Dr. Sheldon Jackson on the introduction of domesticated reindeer into Alaska, I have the honor to transmit said report herewith.

Very respectfully,

W. T. HARRIS,
Commissioner.

The PRESIDENT OF THE SENATE.



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U. S. Revenue Cutter " Bear " Communicating with Siberian Deermen.
 [Photo. by Dr. S. J. Call. From The Californian.]



Herd of Domesticated Reindeer, and Temporary Village of Siberian Deermen.
 [Photo. by Dr. S. J. Call. From The Californian.]

[FRONTISPIECE.]

INTRODUCTION OF DOMESTIC REINDEER INTO ALASKA.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
Washington, D. C., January 2, 1893.

SIR: So many inquiries have been made since my return from Alaska concerning the present progress of the plan to introduce domesticated reindeer into Alaska, that it seems expedient to make a special report on that branch of the work of the office without waiting for the regular annual report on education in Alaska.

I have the honor therefore to submit the following report of progress on the introduction of domesticated reindeer into Alaska:

In the summer of 1890, in accordance with your instructions, I visited Northern Alaska and established schools for the Arctic Eskimo at Cape Prince of Wales, Point Hope, and Point Barrow. Through the courtesy of the Secretary of the Treasury and of Capt. L. G. Shepard, chief of the Revenue Marine Division of the Treasury Department, I was permitted to accompany the U. S. Revenue Marine Steamer *Bear*, Capt. M. A. Healy, commanding, on her annual cruise in Bering Sea and the Arctic Ocean.

In addition to conveying me to the points designated, Captain Healy was under instructions from the Secretary of the Treasury to visit the coast of Siberia, and distribute presents to the Koraks around Cape Navarin in return for shelter and food furnished shipwrecked American whalers. He was also under commission from Superintendent Porter, of the Census Office to take a census of the native population along the arctic coast of Alaska and the islands of Bering Sea, which population could not be reached by the usual enumerators.

The trip to Siberia enabled me to make a cruise of 700 miles along that little-known coast, and study somewhat the character of the native population under conditions corresponding with those under which life must be maintained in Alaska. I found them to be a hardy, active, and well-fed people, owning tens of thousands of head of domestic reindeer.

The taking of the census of arctic Alaska furnished me even more extensive facilities for studying the condition of the Eskimo of Alaska. I found them like their neighbors on the Siberian side to be a hardy and active people, but because they had never been instructed to depend upon the raising of reindeer as a support, unlike the Siberians, they were on the verge of starvation. The whale and walrus that formerly had constituted the principal portion of their food have been destroyed or driven off by the whalers; and the wild reindeer that once abounded in their country, have been killed off by the introduction of breech-loading firearms.

The thorough canvas of the native population for enumeration, necessitating a landing wherever even one or two tents were seen on the

beach, furnished unusual opportunities for observing the educational needs of that people and learning the great difficulties under which schools will have to be carried on.

Upon my return to Washington I had the honor on November 12 to address you a preliminary report of the season's work, emphasizing the destitute condition of the Alaskan Eskimo.

On the 5th of December this report was transmitted by you to the Secretary of the Interior for his information and on the 15th transmitted to the Senate by Hon. George Chandler, Acting Secretary of the Interior. On the following day it was referred by the Senate to the Committee on Education and Labor.

On the 19th of December, Hon. Louis E. McComas, of Maryland, introduced into the House of Representatives a joint resolution (H. R. No. 258), providing that the act of Congress, approved March 2, 1887, "An act to establish agricultural experiment stations in connection with the colleges established in the several States under the provisions of an act approved July 2, 1862, and of the acts supplementary thereto" and an act approved August 30, 1890, entitled "An act to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an act of Congress approved July 2, 1862," should be extended by the Secretary of the Interior over Alaska, with the expectation that the purchase, improvement, and management of domestic reindeer should be made a part of the industrial education of the proposed college.

The resolution was referred to the Committee on Education, and on the 9th of January, 1891, reported back to the House of Representatives for passage. (See Appendix A.)

It was, however, so near the close of the short term of Congress that the resolution was not reached.

When it became apparent that it would not be reached in the usual way, the Hon. Henry M. Teller, on the 26th of February moved an amendment to the bill (H. R. No. 13462) making appropriations for sundry civil expenses of the Government for the year ending June 30, 1892, appropriating \$15,000 for the introduction of domestic reindeer into Alaska, which was carried. The appropriation failed to receive the concurrence of the conference committee of the House of Representatives.

Upon the failure of the Fifty-first Congress to take action, and deprecating the delay of twelve months before another attempt could be made, with your approval, I made an appeal in the Mail and Express of New York City, the Boston Transcript, the Philadelphia Ledger, the Chicago Inter-ocean, and Washington Star, as well as in a number of the leading religious newspapers of the country, for contributions to this object. The response was prompt and generous; \$2,146 were received. (Appendix B.)

As the season had arrived for the usual visit of inspection and supervision of the schools in Alaska you were kind enough to direct that in addition to my regular work for the schools, I should continue in charge of the work of transplanting domesticated reindeer from Siberia to Alaska. As the natives of Siberia, who own the reindeer, know nothing of the use of money, an assortment of goods for the purpose of barter for the reindeer was procured from the funds so generously contributed by benevolent people in answer to the appeal through the newspapers.

The honorable Secretary of the Treasury issued instructions to Cap-

tain Healy to furnish me every possible facility for the purchase and transportation of reindeer from Siberia to Alaska. The honorable Secretary of State secured from the Russian Government instructions to their officers on the Siberian coast, also, to render what assistance they could, and on May 25th, 1892, I again took passage on the revenue cutter Bear, Captain Healy in command, for the coast of Siberia.

The proposition to introduce domesticated reindeer into Alaska had excited widespread and general interest. In the public discussions which arose with regard to the scheme a sentiment was found in some circles that it was impracticable; that on account of the superstitions of the natives they would be unwilling to sell their stock alive; further, that the nature of the reindeer was such that he would not bear ship transportation, and also that even if they could be purchased and safely transported the native dogs on the Alaskan coast would destroy or the natives kill them for food. This feeling, which was held by many intelligent white men (Appendix C), was asserted so strongly and positively that it was thought best the first season to make haste slowly, and instead of purchasing a large number of reindeer to possibly die on shipboard, or perhaps to be destroyed by the Alaskan dogs (thus at the very outset prejudicing the scheme), it was deemed wiser and safer to buy only a few.

Therefore, in the time available from other educational duties during the season of 1891, it seemed important that I should again carefully review the ground and secure all possible additional information with regard to the reindeer, and, while delaying the actual establishment of a herd until another season, that I should determine the correctness of the objections that the natives would not sell and the deer would not bear transportation by actually purchasing and transporting them.

The work was so new and untried that many things could only be found out by actual experience.

First. The wild deermen of Siberia are a very superstitious people, and need to be approached with great wisdom and tact.

Upon one occasion, when Capt. Healy purchased a few reindeer for food, the following ceremonies were observed: When getting ready to lasso the deer the owner's family seated themselves in a circle on the ground, where probably some rites connected with their superstitions were observed. Upon attempting to approach the circle, I was motioned away. After a short time the men went out and lassoed a selected animal, which was led to one side of the herd. The man that was leading him stationed himself directly in front of the animal and held him firmly by the two horns. Another with a butcher knife stood at the side of the deer. An old man, probably the owner, went off to the eastward, and placing his back to the setting sun seemed engaged in prayer, upon the conclusion of which he turned around and faced the deer. This was the signal for knifing the animal. With apparently no effort, the knife was pushed to the heart and withdrawn. The animal seemed to suffer no pain, and in a few seconds sank to his knees and rolled over on his side. While this was taking place the old man before mentioned stood erect and motionless, with his hand over his eyes. When the deer was dead he approached, and taking a handful of hair and blood from the wound, impressively threw it to the eastward. This was repeated a second time. Upon the killing of the second animal, the wife of the owner cast the hair and blood to the eastward.

Since then I have often observed the man who was selling a deer pluck some hair from the deer and put it in his pocket or throw it to the winds for good luck.

If a man should sell us deer, and the following winter an epidemic break out in his herd, or some calamity befall his family, the Shamans would make him believe that his bad luck was all due to the sale of the deer.

Second. The Siberian deermen are a nonprogressive people. They have lived for ages outside of the activities and progress of the world. As the fathers did, so continue to do their children.

Now they have never before been asked to sell their deer; it is a new thing to them, and they do not know what to make of it. They were suspicious of our designs. And in reference to this state of mind I have found that being on a Government vessel has been of great assistance. It impresses the natives with confidence that they will be treated honorably and justly. This moral effect was so great that we secured results that otherwise could not have been obtained so easily.

Then, Capt. Healy, commander of the *Bear*, is well known for thousands of miles on both sides of the coast, and the natives have confidence in him. With

a stranger in command I am confident that but little would have been accomplished in the summer of 1891.

Purchasing reindeer in Siberia is very different from going to Texas and buying a herd of cattle. In Texas such a sale could be consummated in a few minutes or hours. But in Siberia it takes both time and patience.

Upon the anchoring of the ship in the vicinity of a settlement the natives flock aboard, bringing skins and furs to exchange for flour, cotton cloth, powder, lead, etc.

Once aboard they expect to be fed by the captain, and bucket after bucket of hard bread is distributed among them. They know perfectly well that we are after reindeer, but nothing is said about it. They have to be feasted first. They are never in a hurry and therefore do not see why we should be.

After a little, small presents are judiciously given to the wife or child of a leading man, and when everyone is in good humor a few of the leaders are taken into the pilot-house and the



Ran-en-ka.

[The first Siberian to sell a reindeer for the Alaska herd, 1891. Published by permission of the *Californian*.]

main subject is opened. After much discussion and talking all around the subject one man is ready to sell twenty and another perhaps only two. After all is arranged the leading men send their servants off after the deer, which may be in the vicinity or four or five days' journey away. Sometimes these delays consume a week or more at a place.

Another difficulty arises from the fact that they can not understand what we want of the reindeer. They have no knowledge of such a motive as doing good to others without pay.

As a rule the men with the largest herds, who can best afford to sell, are inland and difficult to reach.

Then business selfishness comes in. The introduction of the reindeer on the American side may to some extent injuriously affect their trade in deer skins. From time immemorial they have been accustomed to take their skins to Alaska and exchange them for oil. To establish herds in Alaska will, they fear, ruin this business.

Another difficulty experienced was the impossibility of securing a competent interpreter.

A few of the natives of the Siberian coast have spent one or more seasons on a whaler and thus picked up a very little English. And upon this class we have been dependent in the past.

It is very desirable that a native young man should be secured and trained as an interpreter who could be employed regularly, year after year.

However, notwithstanding all these difficulties and delays, Capt. Healy with the *Bear* coasted from 1,200 to 1,500 miles, calling at the various villages and holding conferences with the leading reindeer owners on the Siberian coast. Arrangements were made for the purchase of animals the following season. Then, to answer the question whether reindeer could be purchased and transported alive, sixteen were purchased, kept on shipboard for some three weeks, passing through a gale so severe that the ship had to "lie to," and finally landed in good condition at Amaknak Island, in the harbor of Unalaska, having had a sea voyage of over 1,000 miles.

Thus the results of investigations for 1891 were:

First. The cultivation of the good will of the Siberians.

Second. The actual purchase of sixteen head of reindeer.

Third. That reindeer can be transported with the same facility as other domestic cattle; they being safely loaded, kept on shipboard for three weeks, and landed in good condition a thousand miles away.

Upon my return to Washington in the fall of 1891 the question was again urged upon the attention of Congress, and on the 17th of December, 1891, Hon. H. M. Teller introduced a bill (S. 1109) appropriating \$15,000, to be expended under the direction of the Secretary of the Interior, for the purpose of introducing and maintaining in the Territory of Alaska reindeer for domestic purposes. This bill was referred to the Committee on Agriculture and Forestry, Hon. Algernon S. Padlock, chairman. The committee took favorable action and the bill was passed by the Senate on May 23, 1892. On the following day it was reported to the House of Representatives and referred to the Committee on Appropriations. A similar bill (H. R. 7764) was introduced into the House of Representatives by Hon. A. C. Durborow and referred to the Committee on Agriculture.

On April 15, Hon. S. B. Alexander, of North Carolina, reported the bill to the House of Representatives with the approval of the Committee of Agriculture (Appendix D). The bill was placed on the calendar.

On the 2d day of May, 1892, I started for my third summer's work on the coast of Siberia and Arctic Alaska in the U. S. S. *Bear*, Capt. M. A. Healy commanding.

In accordance with your instructions, all the time that could be spared from the schools was given to the establishment of the experimental reindeer station.

Upon reaching Unalaska, May 22, I was much encouraged to learn that the reindeer left last fall on Amaknak and Unalaska Islands had wintered successfully and were in good condition with an increase of two.

We reached Cape Navarin, Siberia, on the 6th of June, and proceeding north called at various points on the coast. Our progress was greatly hindered by heavy fields of ice. The good ship had two anchors ground up and one of the blades of the propeller broken off by the ice. Upon several occasions, we were so surrounded that the propeller was stopped and the ship moored to the ice. A less staunch vessel would have been unable to stand the strain. However, during the season, five trips were made to Siberia, and 175 reindeer purchased, brought over, and landed at the head of Point Clarence, which being the nearest good harbor to Asia on the American side, and a central point for the distribution of deer, I had selected, June 29, as the location of the first reindeer station.

The first installment of deer, numbering fifty-three, was landed at the new station at 6 o'clock on the morning of the 4th of July.

Mr. Miner W. Bruce, of Nebraska, was appointed superintendent of the station and herd, with Mr. Bruce Gibson, of California, as his assistant. (Appendix H.)

Upon the establishment of the experimental reindeer herd at Port Clarence, it became important to gain information concerning the surrounding country.

To secure full and reliable information with reference to pasturage in the vicinity of Bering Straits I had the previous season employed Mr. W. T. Lopp, teacher at Cape Prince of Wales, to make two trips northward along the coast in midwinter (1891-'92), when the moss might be expected to be covered with ice and snow (see Appendix E), and in the fall of 1892 sent Mr. Bruce Gibson, assistant superintendent of the reindeer station, with a party of natives, to the northward of Port Clarence (see Appendix F), and a few weeks later Mr. Miner W. Bruce, superintendent of the station. (See Appendix G.)

These several reconnoissances proved both the abundance of moss and its accessibility for winter pasturage to the new station.

A comfortable house, 20 by 60 feet, was erected as a residence for the superintendent and his assistant, and also for the storing of the annual supply of provisions and barter goods.

Close to the main house two comfortable dugouts were built for the use of the herders. Four Siberians, well acquainted with the management of reindeer, were brought over and placed in charge of the herd. With the Siberians were placed a few young men from the Alaskan Eskimo, who are expected to learn the management and care of the herd. The present expectation is to increase the number of Alaskan boys, who shall become apprentices to the herders, and when they have sufficiently learned the business and proved their capability to take care of reindeer, a small herd will be given each one as his start in life. As from year to year the number of such young men is increased and a number of the natives become herders, the herds will naturally become more and more distributed throughout the country, until, eventually,

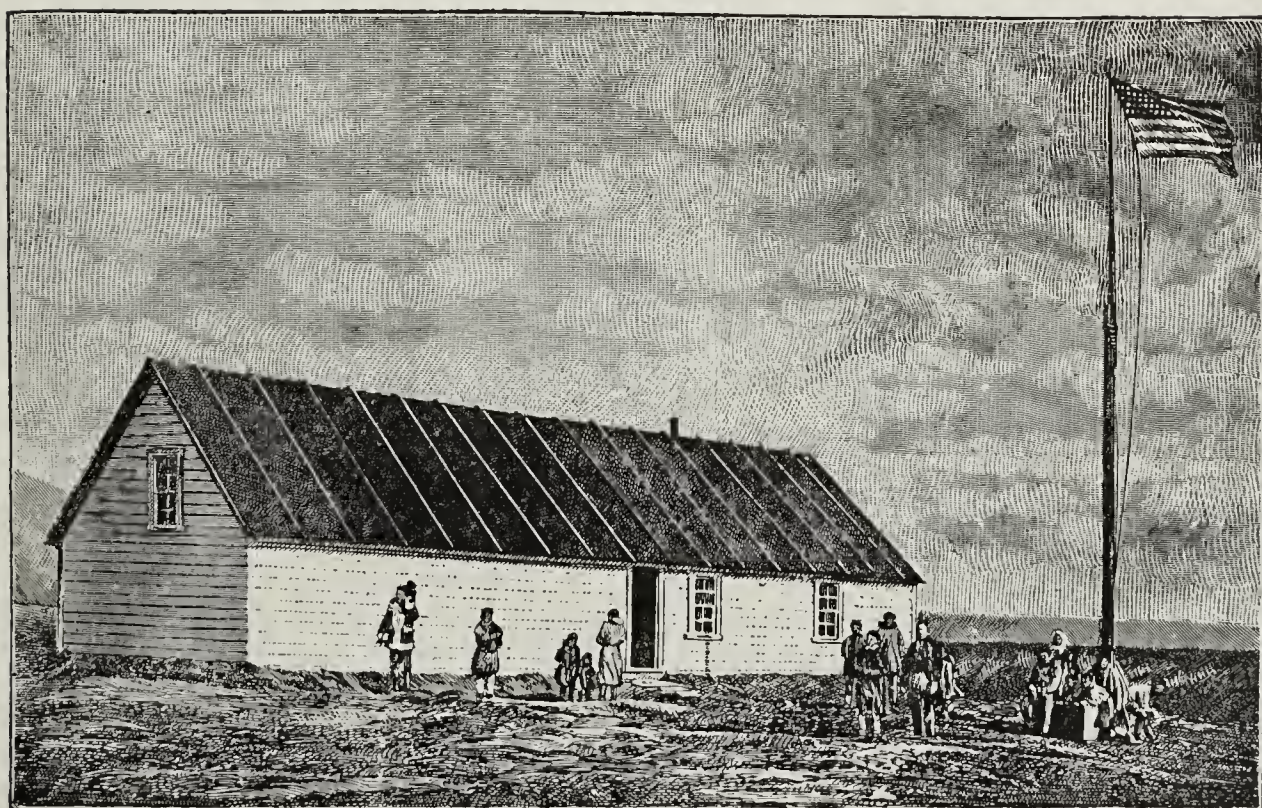


Hoisting in a Reindeer on Board the Bear

[From a photo. by Assistant Engineer A. L. Broadbent, U. S. R. M. Published by permission of The Californian.]



Young Eskimo Woman.



House at Reindeer Station, Port Clarence, Alaska.

that whole northern region shall be covered with them, as the similar regions of Siberia and Lapland are now covered. (Appendix J.)

With the accomplishment of this result several important objects will be attained.

PERMANENT FOOD SUPPLY.

In the first place, the population, which is now upon the verge of starvation, will be furnished with a permanent, regular, and abundant supply of food. As has already been stated the native supply of food in that region has been destroyed by the industries of the white men. (Appendix K.) The whale and the walrus that once teemed in their waters and furnished over half their food supply, have been killed or driven off by the persistent hunting of the whalers. The wild reindeer (caribou) and fur-bearing animals of the land, which also furnished them food and clothing, are largely being destroyed by the deadly breech-loading firearm. It will be impossible to restock their waters with whale and walrus in the same way that we restock rivers with a fresh supply of fish. But what we can not do in the way of giving them their former food, we can, through the introduction of the domestic reindeer, provide a new food supply.



Siberian deermen brought to Alaska with the first herd.

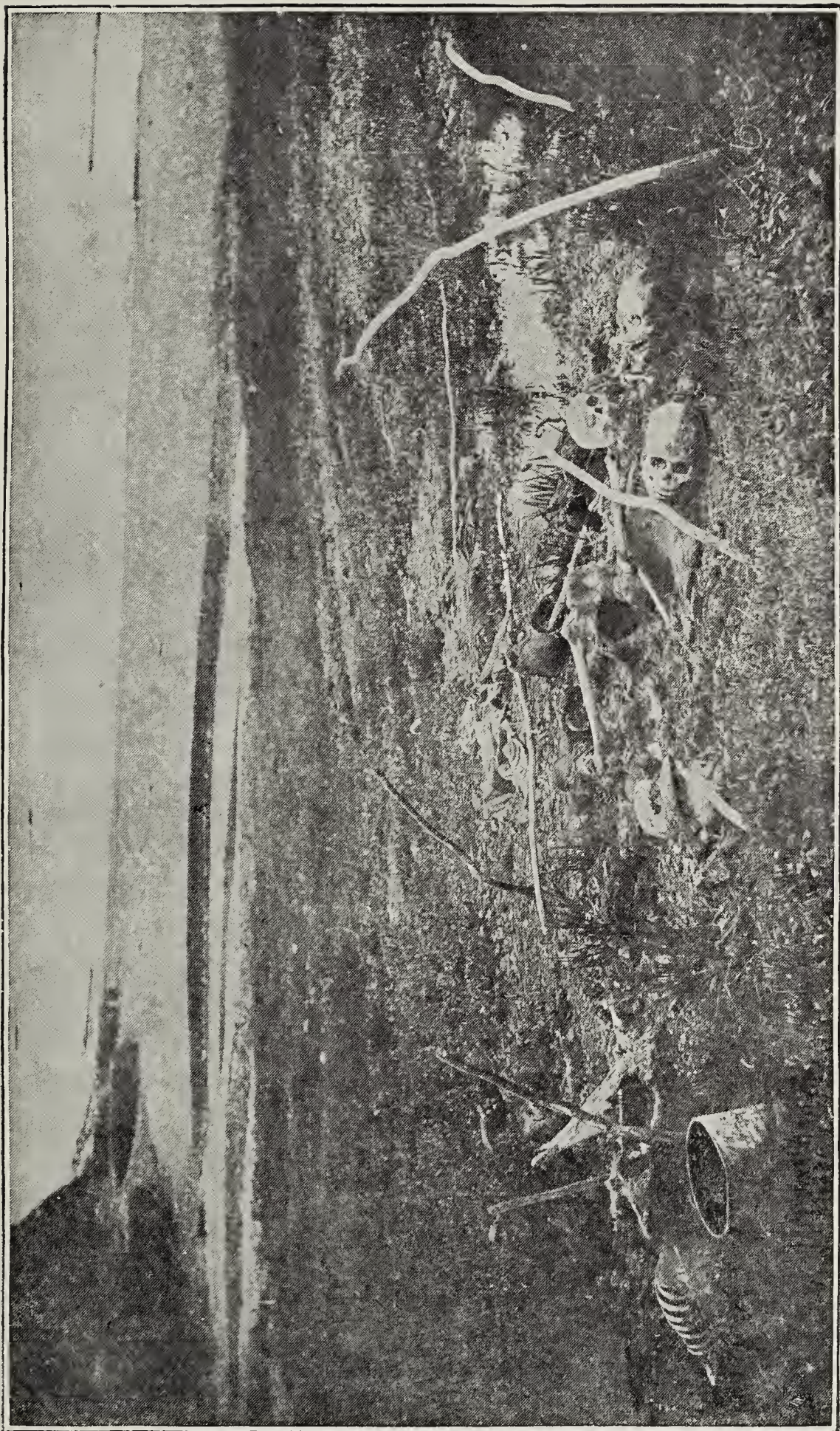
[From a photo. by Dr. S. J. Call. Published by permission of the Californian.]

Upon our return southward from the Arctic Ocean in the fall of 1891, Capt. Healy providentially called at the village on King Island, where we found the population starving. The appeal for food was so pressing that the captain detailed a lieutenant to make a thorough examination of the village, and invited me to accompany him. In a few houses we found that the families in their great distress had killed their sled-dogs to keep themselves from starving. In the larger number of families they were making a broth of seaweed, their only food supply. In all human probability, if the ship had not learned their condition, the following summer not a man, woman, or child would have been left alive to tell the story. A few years ago the same thing happened to three large villages on the Island of St. Lawrence, and when, the following season, the revenue cutter called at the village, the putrefying corpses of the population were found everywhere—on the bed plat-

forms, on the floors, in the door ways, and along the paths, wherever death overtook them.

At King Island, having ascertained the condition of things, a purse was made up from the officers and a few others on board the ship, and the captain steamed some two hundred miles to the nearest trading post, and purchased all the provisions that could be obtained, which were taken back to the starving village. This supply sustained the population alive until seal and walrus came some months later around the village. The movement of the seal and walrus, since their numbers have become greatly diminished, is so uncertain that, while a village may have plenty to eat one season they will be on the verge of starvation another.

In the winter of 1890-'91 there was a sufficiency of food at Point Hope. In the winter of 1891-'92 the same population had to leave their village and make their way, in some instances hundreds of miles, to other villages to keep from starving. In 1891 one of the teachers on the Kuskowin River wrote me that the inhabitants of that valley had had but little opportunity during the summer of 1890 to provide a sufficient food supply of fish, that consequently starvation faced them all winter, and that it was with great difficulty that they survived until the fish returned the following season. A teacher on the Yukon River reported this past summer that some of the natives to the north of him had starved to death. This same scarcity of food exists across the entire northern portion of North America, so that now, under the auspices of the Church of England, subscriptions have been opened in London for a famine fund out of which to send relief to the starving Eskimo of Arctic British America. This condition of things will go on, increasing in severity from year to year, until the food supply of the seas and of the land is entirely gone, and then there is nothing left but the extermination of the native population. The general introduction of the domestic reindeer alone will change this entire condition of things, and furnish as reliable supply of food to that people, as the herds of cattle in Texas and Wyoming do to their owners, or the herds of sheep in New Mexico and Arizona. The reindeer is the animal which God's providence seems to have provided for those northern regions, being food, clothing, house, furniture, implements, and transportation to the people. Its milk and flesh furnish food. Its marrow, tongue, and hams are considered choice delicacies. Its blood, mixed with the contents of its stomach, forms a favorite native dish. Its intestines are cleaned, filled with tallow, and eaten as sausage. Its skin is made into clothes, bedding, tent covers, reindeer harness, ropes, cords, and fish lines. The hard skin of the fore legs make an excellent covering for snowshoes. Its sinews are made into a strong and lasting thread. Its bones are soaked in seal oil and burned for fuel. Its horns are made into various kinds of household implements, into weapons for hunting, fishing, or war, and in the manufacture of sleds. Then the living animal is trained for riding and dragging of sleds. The general introduction of such an animal into that region will arrest the present starvation and restock that vast country with a permanent food supply. It will revive hope in the hearts of a sturdy race that is now rapidly passing away. Surely, the country that sends shiploads of grain to starving Russians, that has never turned a deaf ear to the call of distress in any section of the globe, will not begrudge a few thousand dollars for the purchase and introduction of this Siberian reindeer, and the rescue of thousands of people from starvation.



A Sad Story.

REPEOPLING THE COUNTRY.

In the second place the introduction of domestic reindeer into Alaska will not only thus arrest the present starvation, but will assist in increasing the population. With a more generous food supply this population will commence to increase in numbers. Occupying a region whose climatic conditions are so rigorous that but few white men will ever be willing to make their permanent home in it, it is important, if we would save it from being an unpeopled waste and howling wilderness, that we build up the people who through generations have become acclimated and who are as fervently attached to their bleak and storm-swept plains as the people of temperate and torrid zones to their lands of comfort and abundance.

They are a race worth saving. I find that public opinion, gained perhaps by a more familiar knowledge of the Eskimo of Greenland and Labrador, conceives of the Alaska Eskimos as of the same small type. But this is not true.

In the extreme north, at Point Barrow, and along the coast of Bering Sea they are of medium size. At Point Barrow the average height of the males is five feet three inches and average weight 153 pounds; of the women, four feet eleven inches and weight 135. On the Nushagak River the average weight of the men is from 150 to 167 pounds. From Cape Prince of Wales to Icy Cape and on the great inland rivers emptying into the Arctic Ocean, they are a large race, many of them being six feet and over in height. At Kotzebue Sound I have met a number of men and women six feet tall. Physically they are very strong, with great powers of endurance. When on a journey, if food is scarce, they will travel thirty to forty miles without breaking their fast. Lieutenant Cantwell, in his explorations of the Kowak River, makes record that upon one occasion when he wanted a heavy stone for an anchor a woman went out and alone loaded into her birch-bark canoe and brought him a stone that would weigh 800 pounds. It took two strong men to lift it out of the canoe.

Another explorer speaks of a woman carrying off on her shoulder a box of lead weighing 280 pounds. This summer, in erecting the school buildings in the Arctic, there being no drays or horses in that country, all the timbers, lumber, hardware, etc., had to be carried from the beach to the site of the house on the shoulders of the people. They pride themselves on their ability to outjump or outrun any of our race who have competed with them. They can lift a heavier weight, throw a heavy weight farther, and endure more than we. They are a strong, vigorous race, fitted for peopling and subduing the frozen regions of their home.

Arctic and subarctic Alaska cover an empire in extent equal to nearly all Europe. With the covering of those vast plains with herds of domesticated reindeer it will be possible to support in comparative comfort a population of 100,000 people where now 20,000 people have a precarious support. To bring this about is worthy the fostering care of the General Government.

CIVILIZATION OF THE ESKIMOS.

Thirdly, the introduction of domestic reindeer is the commencement of the elevation of this race from barbarism to civilization. A change from the condition of hunters to that of herders is a long step upwards in the scale of civilization, teaching them to provide for the future by new methods.

Probably no greater returns can be found in this country from the expenditure of the same amount of money than in lifting up this native race out of barbarism by the introduction of reindeer and education.

ARCTIC TRANSPORTATION.

Fourthly, the introduction of the domestic reindeer will solve the question of arctic transportation. (Appendix L.) The present transportation of that region is by dog sleds. One load of supplies for the trader or traveler requires a second load of food for the two teams of dogs, and they make but short distances per day. This difficulty of transportation has been one great drawback to the development of the country. It has interfered with the plans of the fur trader; it has interfered with Government exploration. Only three years ago when the U. S. Coast and Geodetic Survey sent two parties to determine the international boundary between Alaska and British America the small steamer that was conveying the supplies up the Yukon River was wrecked, and it was with the utmost difficulty that the surveying parties were kept from starvation because of the difficulty of sending sufficient food 2,000 miles along that great valley by dog sleds. If reindeer had been introduced into the country there would have been no such difficulty in furnishing food. Bills have been before Congress for several years proposing to establish a military post in the Yukon Valley. If such a post is established it is not at all improbable that a combination of circumstances may arise some winter by which the forces that shall be stationed there will be reduced to starvation unless reindeer transportation shall have become so systematized that food can readily be sent in from other regions. The same is true with reference to the Government officials whom it may be found necessary to station in that region.

The same is true of the forty or more missionaries and their families that are now scattered through that vast region; also, of the teachers and their families whom the Government has sent into that country.

These are now separated from all communication with the outside world, receiving their mail but once a year. With reindeer transportation they could have a monthly mail.

During the past three years the whalers have been extending their voyages east of Point Barrow to the mouth of the Mackenzie River, and wintering at Herschel Island. To the owners of this property it would be worth tens of thousands of dollars if they could hear from their vessels in the winter before new supplies and additional vessels are sent out in the spring. But this can not now be done. Last winter letters were sent out from the field, overland, by Indian runners that ascended the Mackenzie, crossed over to the Porcupine, and descended the Porcupine and Yukon rivers down to St. Michael, on the coast. It was ten months before those letters reached their destination. It was a great satisfaction to the owners to hear of the welfare of their ships and crews, but the news was too late for business purposes. Millions of dollars' worth of property and thousands of lives are involved in the whaling business. With the introduction of domestic reindeer into that region it will be both feasible and perfectly practicable to establish a reindeer express during the winter from the Arctic coast down to the North Pacific coast of Alaska.

The southern coast of Alaska on the Pacific Ocean never freezes, and is accessible all the year around to vessels from San Francisco or Puget Sound.



From "Reindeers, Dogs, and Snow-shoes."

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Reindeer in Harness.



Reindeer under Saddle.

A reindeer express across Alaska, from the Arctic to the Pacific Ocean, would have a corresponding commercial value to that section as the telegraph between New York and London to theirs. It would enable the owners of the whaling fleet to avail themselves of the latest commercial news and keep a more perfect control over their business.

COMMERCIAL VALUE.

In the sixth place, the introduction of domesticated reindeer will add a new industry to that country, which will go to swell the aggregate of national wealth. Lapland sends to market about 22,000 head of reindeer a year, the surplus of her herds.

Through Norway and Sweden smoked reindeer meat and smoked reindeer tongues are everywhere found for sale in their markets, the hams being worth 10 cents a pound and the tongues 10 cents a piece. There are wealthy merchants in Stockholm whose specialty and entire trade is in these Lapland products. The reindeer skins are marketed all over Europe, being worth in their raw condition from \$1.50 to \$1.75 apiece. The tanned skins (soft, with a beautiful yellow color) find a ready sale in Sweden, at from \$2 to \$2.75 each. Reindeer skins are used for gloves, military riding trousers, and the binding of books. Reindeer hair is in great demand for the filling of life-saving apparatuses, buoys, etc., and from the reindeer horns is made the best existing glue. One great article, smoked reindeer tongues, and tanned skins are among the principal products of the great annual fair at Nischnij Novgorod, Russia. In Lapland there are about 400,000 head of reindeer, sustaining in comfort some 26,000 people. There is no reason, considering the greater area of the country and the abundance of reindeer moss, why arctic and subarctic Alaska should not sustain a population of 100,000 people with 2,000,000 head of reindeer. In Lapland the reindeer return a tax of \$1 a head to the Government, so that they yield an annual revenue to the Government of \$400,000.

With the destruction of the buffalo the material for cheap carriage and sleigh robes for common use is gone. Bear and wolf skins are too expensive; but with the introduction of the reindeer their skins would to a certain extent take the place of the extinct buffalo.

The commercial importance of introducing domesticated reindeer in Alaska was so manifest that shrewd business men on the Pacific coast at once appreciated the great possibilities involved, and hastened, through their chambers of commerce and boards of trade, to take action urging their several delegations in Congress to do what they could to secure an appropriation of money for these purposes. (Appendix N.)

Under favorable circumstances a swift reindeer can traverse 150 miles in a day. A speed of 100 miles per day is easily made. As a beast of burden they can draw a load of 300 pounds.

The progress of exploration, settlement, development, government, civilization, education, humanity and religion, are all largely dependent in that region on reindeer transportation.

If there is any measure of public policy better established than another or more frequently acted upon, it has been the earnest and unceasing efforts of Congress to encourage and aid in every way the improvement of stock, and the markets of the world have been searched for improved breeds. The same wise and liberal policy will make ample provision for the introduction of the reindeer, which of all animals is the most serviceable and indispensable to man in high northern latitudes.

If it is sound public policy to sink artesian wells or create large water

reservoirs for reclaiming large areas of valuable land otherwise worthless; if it is the part of national wisdom to introduce large, permanent, and wealth-producing industries where none previously existed, then it is the part of national wisdom to cover that vast empire with herds of domestic reindeer, the only industry that can live and thrive in that region, and take a barbarian people on the verge of starvation, lift them up to a comfortable support and civilization, and turn them from consumers into producers of national wealth.

It will be noticed that the sum asked from Congress is only \$15,000. I hope that this will not be misunderstood and taken as a measure of the importance of the movement, for if the proposed results could not be obtained with any less sum an appropriation of hundreds of thousands of dollars would be both wise and economical.

But so small a sum is accepted on the ground of proceeding with extreme caution. It is the commencement of a great movement that will, if successful, extend its beneficial influences as long as the world stands. Therefore we move slowly and carefully at first in order to secure that success. Commencing in a small way, the first outlay of money is not large.

In 1891 the sixteen reindeer purchased average \$10.25 each. This last season the general average was brought down to \$5 each.



Superstitious ceremony connected with killing or selling reindeer in Siberia.

So far the purchase of the reindeer has been defrayed from the money contributed by benevolent individuals.

REVENUE MARINE SERVICE.

These gratifying results, however, could not have been attained without the hearty and active coöperation of the Revenue-Marine Service.

If this office had been required to charter a vessel for the transporting of the reindeer nothing could have been done with the small sum at our disposal.

But the Secretary of the Treasury directed that the revenue cutter *Bear*, in addition to her regular duties of patrolling the Seal Islands and the coasts of Bering Sea and the Arctic Ocean, following the whaling fleet and inspecting the Refuge Station at Point Barrow, should also give what time was possible to transporting the reindeer.

To the captain, officers, and crew of the *Bear* is due much praise for the hard work done by them.

Special thanks are due Capt. M. A. Healy for his earnestness and efficiency in doing his part of the work; also to Lieut. D. H. Jarvis, Surgeon S. J. Call, and Assistant Engineer Falkenstein, who were in charge of much of the shore work of loading and unloading the deer.



Sketch Map of
ALASKA

Prepared for U.S. Bureau of Education
By the U.S. Coast and Geodetic Survey

To accompany Reindeer Report by Sheldon Jackson, D.D.

U.S. General Agent of Education

in Alaska.

1893

ILLUSTRATIONS.

I have the honor of inclosing an excellent map, prepared through the courtesy of the U. S. Coast and Geodetic Survey, also several illustrations kindly loaned by The Californian, Scribner's, and Harper's.

Also a few other photographs taken by Surg. Call and Assistant Engineer Broadbent, of the *Bear*.

The map and illustrations will greatly add to the interest of the report.

Hoping that Congress will provide the funds necessary for a further prosecution of the work, I remain, with great respect,

Yours, truly,

SHELDON JACKSON,
General Agent of Education in Alaska.

Hon. W. T. HARRIS,
Commissioner of Education.

S. Mis. 22—2

APPENDIX A.

[House Report No. 3414, Fifty-first Congress, second session.]

Mr. McComas, from the Committee on Education, submitted the following report (to accompany H. Res. 258):

The Committee on Education reports favorably House joint resolution 258, with sundry amendments recommended by the committee.

Congress has passed several acts encouraging the establishment of agricultural schools and experiment stations in the different States and Territories.

These several acts require the assent of the legislatures of the several States and Territories before their provisions become available; but as Alaska has no legislature, it is the only Territory which is unable to avail itself of the benefits and provisions of these acts.

This bill proposes to extend to Alaska the benefits and provisions of the agricultural acts through the Secretary of the Interior, in like manner to the other Territories. The acts are recited in the preamble to the joint resolution.

There has been very wide divergence of views with regard to the agricultural and horticultural capabilities of Alaska, or whether it has any agricultural capabilities at all.

This bill would secure the establishment of an experimental station in southern Alaska, which has a temperate climate, and test the question of what can and what can not be raised to advantage.

This would be of very great service, both to the natives, who, through the Government schools, are coming into our civilization, and to the white settlers who may locate in that vast region, which embraces about 580,000 square miles.

There are hundreds of thousands of square miles of area within the Arctic regions of Alaska that, there is no question, can never be adapted to ordinary agricultural pursuits, nor utilized for purposes of raising cattle, horses, or sheep; but this large area is especially adapted for the support of reindeer.

This bill will enable the Secretary of the Interior, through the Government industrial schools, to make the stock-raising of reindeer the great industrial feature of that region.

This will utilize hundreds of thousands of square miles of territory, will build up a large and profitable industry, and above all, will provide a comfortable support for the native population of that region.

This is the more important at the present time, because the American whalers have practically destroyed and driven out the whale and the walrus from the waters adjacent to the coast of Alaska.

The destruction of the whale and walrus has taken away three-fourths of the ordinary food supply of the Eskimo population, and that population to-day on the Arctic coast of Alaska is on the verge of starvation. The large canneries will soon take away the fish supply.

The introduction of tame reindeer from Siberia into Alaska thus has a two-fold importance:

(1) As the establishment of a profitable industry.

(2) As a relief of a starving people, a relief that will become more and more valuable as the years roll round, a relief that once established perpetuates itself.

This project is wiser than to pauperize the people of Alaska.

The revenue from that country warrants this attempt to make these people self-sustaining.

The lease of the Seal Islands by the United States Treasury Department to the North American Commercial Company, on the basis of 100,000 skins, ought to yield a revenue of about \$1,000,000 annually. Under the old lease the revenue was \$317,500 annually.

The extending to Alaska of the benefits of the agricultural bill approved August 30, 1890, would give for the year ending June—

1890	-----	\$15, 000
1891	-----	16, 000
1892	-----	17, 000
		48, 000

From the act establishing agricultural experiment stations approved July 2, 1862, the sum of \$15,000.

The joint resolution would therefore carry for the year ending June 30, 1892, \$93,000, and for the following year, \$33,000.

The committee report therefore this joint resolution with the following amendments and recommend that it pass.

In line 4, page 2, after the word "to," insert "give any assent required by either of said acts, and to."

In line 4, page 2, after the word "benefits," insert "and provisions."

In line 6, page 2, after "Territory," insert "of Alaska."

In line 7, page 2, after the word "acts," add "in like manner as for any other Territory."

APPENDIX B.

LIST OF CONTRIBUTIONS TO THE REINDEER FUND, 1891.

1891.

May 15.	Miss H. S. Benson, Philadelphia	\$200.00
	John N. Brown, Providence, R. I.	200.00
	Jane N. Grew, Boston	30.00
	Mary P. Gardner, New York	10.50
	Sarah B. Reynolds, Kingston, N. Y.	10.00
	Mrs. H. B. Otis, Roxbury, Mass.	10.00
	M. A. & S. H. Foster, Portsmouth N. H.	10.00
June 10.	Boston Transcript from various persons	289.00
	E. G. Read, Somerville, N. J.	10.00
	Effe V. V. Knox, New York	10.00
	Mrs. N. Williamson, Brunswick, N. J.	10.00
	E. E. B., 140 Lanvale street, Baltimore, Md.	1.00
	Helen B. French, Beloit, Wis.	10.00
	Mary Ellen Smith, Philadelphia, Pa.	10.00
	Judge E. R. Hoar, Concord, Mass.	10.00
	C. H. Barstow, Crow Agency, Mont.	15.00
	M. E. D., per Boston Transcript	1.00
	A. F. Allyn, Chelsea, Mass.	1.00
	R. P. Wainwright, Asheville, N. C.	10.00
	M. A. Haven and Annie W. Davis, Portsmouth, N. H.	10.00
	Mary Hemingway, Boston, Mass.	100.00
	The Mail and Express	500.00
	Mrs. William Thaw	50.00
	Five children in one family, one reindeer each	50.00
	Mrs. F. L. Achey	20.00
	M. E. P.	50.00
	The young ladies of Rye Seminary, Rye, N. Y.	50.00
	Mary L. Parsons	20.00
	Y. P. S. C. E., Reformed Church, Mount Vernon	13.65
	Three ladies of East Orange, N. J.	12.00
	G. K. Harroun	10.00
	H. G. Ludlow	10.00
	Mrs. H. G. Ludlow	10.00
	Mrs. R. C. Crane	10.00
	Mrs. Edwin G. Benedict	10.00
	Mrs. M. C. Cobb	10.00
	E. M. Chadwick	10.00
	Augusta Moore	10.00
	Rev. Wm. T. Doubleday	10.00
	E. M. Eames	10.00
	Chas. H. Wells	10.00
	A. R. Slingushard	10.00
	James M. Ham	10.00
	Mrs. James M. Ham	10.00
	Mrs. Robert I. Brown	10.00
	William Rust	10.00
	Mrs. Levi S. Gates	10.00

List of contributions to the Reindeer fund, 1891—Continued.

1891.

June 10.	Bethlehem Chapel Mission School	\$10.00
	Mrs. Richard L. Allen	10.00
	Miss M. I. Allen	10.00
	E. Holman	10.00
	C. and family, East Orange, N. J.	10.00
	J. Van Santwood	5.00
	James F. E. Little	5.00
	Frederick W. Stoneback	5.00
	J. H. Charles	5.00
	V. Thompson	5.00
	W. T. Bliss	5.00
	Howard Wilson	5.00
	G. H. Fleming	5.00
	W. S. Quigley	5.00
	J. Lantz	5.00
	From friends	2.60
	Mrs. L. E. Hastings	1.20
	A. E. Barnes	1.00
	Amelia J. Burt	1.00
	W. A. Deering	5.00
	L. F. Golding	5.00
	J. A. Hennessy	5.00
	R. H. Stoddard	5.00
	William R. Worrall	5.00
	H. W. Dourmett	5.05
	Betty Deming (a child)	10.00
	John Deming (a child)	10.00
	Anonymous	10.00
	Little Lights Society	5.00
	Mrs. Edmund T. Lukens	5.00
	W. S.	5.00
	Cuttenden Hull, A	10.00
	Mrs. Clinton B. Fisk	10.00
	W. U. A	20.00
	Thomas Harrington	10.00
	E	10.00
June 18.	Mrs. Debbie H. Parker, Charlottesville, Ind	5.00
	Gen. E. E. Whittlesey, Washington, D. C	10.00
1892.		
Feb. 1.	Miss Mary Burroughs, Philadelphia, Pa	5.00
11.	A. D. Simpson, Christiansburg, Va	10.00
	Total	2,146.00

Of the above amount \$1,158 was collected through the Mail and Express, of New York.

APPENDIX C.

TENT LIFE IN SIBERIA.

By GEORGE KENNAN.

[Published by George P. Putnam's Sons. 1870. Page 116.]

● Among the many superstitions of the Wandering Koraks and Chookchees one of the most noticeable is their reluctance to part with a living reindeer. You may purchase as many dead deer as you choose, up to 500, for about 70 cents apiece; but a living deer they will not give to you for love nor money. You may offer them what they consider a fortune in tobacco, copper kettles, beads, and scarlet cloth for a single live reindeer, but they will persistently refuse to sell him. Yet, if you will allow them to kill the very same animal, you can have

his carcass for one small string of common glass beads. It is useless to argue with them about this absurd superstition. You can get no reason for it or explanation of it, except that to sell a live reindeer would be "atkin" (bad). As it was very necessary in the construction of our proposed telegraph line to have trained reindeer of our own we offered every conceivable inducement to the Koraks to part with one single deer; but all our efforts were in vain. They could sell us 100 dead deer for 100 pounds of tobacco, but 500 pounds would not tempt them to part with a single animal as long as the breath of life was in his body. During the two years and a half which we spent in Siberia no one of our parties, so far as I know, ever succeeded in buying from the Koraks or Chookchees a single living reindeer.

APPENDIX D.

DOMESTICATED REINDEER IN ALASKA.

[House Report No. 1093, Fifty-second Congress, first session.]

Mr. Alexander, from the Committee on Agriculture, submitted the following report:

The Committee on Agriculture, to whom was referred the bill (H. R. 7764) to secure the introduction of domesticated reindeer into Alaska, report the same with a favorable recommendation. This bill does not properly come within the jurisdiction of the Committee on Agriculture, but should have been considered by the Committee on Appropriations. At the suggestion of the chairman of the Committee on Appropriations the Committee on Agriculture, having heard the testimony of the missionaries from Alaska, the Commissioner of Education, and others in regard to the merits of the bill, have considered it and recommend its passage.

The testimony showed that there are no reindeer in Alaska; that Alaska could support many times enough reindeer to furnish the inhabitants with food and clothing, and that the reindeer skins are indispensable for clothing; that the whale and walrus, the principal supply of food, have been destroyed to such an extent as to cause much suffering for food; that dogs are used for transportation, and in many places the supply of food is becoming so scarce that the natives are compelled to eat their dogs, thus depriving them of the means of hauling their supplies; that for the development of the country the domesticated reindeer is absolutely indispensable; that the domesticated reindeer can make a speed of 19 miles an hour, and that a fair average rate of speed is 12 miles per hour; and this means of transportation is necessary to develop the gold fields of the interior, which can only be worked from two to two and one-half months a year; that the reindeer would be distributed at the Government schools, the native youths taught to herd and raise them, the increase to be given to worthy students and native teachers for services rendered; that this will induce the natives to become herders, be self-supporting, and not a charge upon the Government; that the natives have no vessels that can transport the live reindeer from Siberia to Alaska; that the vessels from San Francisco to Alaska leave the 1st of May to the 1st of June, none later than the last date mentioned, and that if anything be done this year it is absolutely necessary to get the appropriation in time to send the goods for the purchase of the reindeer by the revenue cutter that leaves San Francisco the 1st of June.

The description given by the missionaries and others of the country, the habits of the natives, etc., was interesting. The distress caused by the continued failure of the food supply shows plainly that the natives will not be able to sustain themselves, and will become a charge upon the Government. For these and other reasons the Committee on Agriculture urge the passage of this bill.

APPENDIX E.

MR. W. T. LOPP'S RECONNOISSANCE ALONG THE COAST NORTH OF BERING STRAITS.

CAPE PRINCE OF WALES, ALASKA,
January 20, 1892.

DEAR SIR: According to your instructions, I have made two expeditions up the coast north of here, and submit you the following report:

In November employed Eskimo, dogs, and sled, and explored west shore of Lounge Inlet or Lake, just north of Cape Prince of Wales, up to its head, where Grouse River empties into it. The mountains (see chart inclosed) were sloping and rolling, not sharp and rocky, and covered with moss. Portions of these hills were covered with 3 to 5 inches of snow, but all the exposed portions were free from any snow. This inlet is about 30 miles long and has two outlets to the sea. Along the banks of Grouse River are acres of bushes (3 to 6 feet), hundreds of ptarmigan, and nice-sized fish in the river.

On December 27 started with boy, dogs, and sled for Ke-gik-tok. Had fine weather—short days—visited about 300 people. Some settlements had plenty of oil, seal meat, and fish, and others had little or none. All were very anxious to have deer introduced. Most of them seem to doubt that ownership would ever pass into their hands. They complain that they have to pay exorbitant prices to Cape Prince of Wales chiefs for deer skins. They reported moss very plentiful. At that time there was so little snow that it would be unnecessary to graze deer on the mountain side. I could see that the smooth expanse of country from coast to mountain was covered with only 3 or 4 inches of soft snow, no crusts or ice. (Unlike last winter, there have been no thaws this winter, consequently no ice crust on snow.) These coast people live on seal meat, oil, fish, ptarmigan, and squirrel. They are not a trading people, have had little or no intercourse with ships; are honest, industrious, and healthy.

Found a very prosperous settlement at Ke-gik-tok of eighty people. Asked me to bring the school up there, etc.

I think several hundred deer could be grazed along the hills from Cape Prince of Wales to Ke-gik-tok. I am satisfied from what I have seen and heard that there are hundreds of acres of good grazing land extending from the coast back to rivers flowing into lakes back of Port Clarence and those flowing into Kotzebue Sound. Settlements are so distributed along the coast from Cape Prince of Wales to Kotzebue Sound that deer-men along the mountains could easily be supplied with seal oil and meat. And if inclosures are ever necessary there are plenty of bushes in small rivers to make them. I think these coast people are better situated and adapted for herding than any other Alaskan people.

They are all superstitious and are great cowards after dark. Perhaps it will be necessary to have them stand watch at night in pairs until they become accustomed to the darkness. (One Eskimo never goes any place after dark if he can help it. He see ghosts; but is all right with a companion.)

Hoping and trusting that we may sometime have occasion to make use of knowledge obtained on these two little expeditions, I am,

Very truly yours,

W. T. LOPP.

Dr. SHELDON JACKSON,
Washington, D. C.

APPENDIX F.

RECONNOISSANCE NORTH OF PORT CLARENCE BY BRUCE GIBSON.

REINDEER STATION, PORT CLARENCE, ALASKA,
August 2, 1892.

SIR: I respectfully submit herewith report of expedition made by Mr. Gibson into interior, north of station, for the purpose of ascertaining probable condition of grazing for reindeer during winter months—copied from his notes, as follows:

"I started on expedition July 27, leaving station at 12 o'clock, noon; taking with me as guide Charley, as expert on pasturage, Chief Herder Pungen, and

five natives to pack tent and supplies. Traveled in a northwesterly direction, and for about 4 miles found good feed and several small lakes. I then changed my course to north for about three-quarters of a mile and found scarcely any feed, it being very rocky and barren; I then went west again for 7 miles and camped at a river about 30 feet wide. The first quarter of a mile of this last course was very rocky, boulders from 4 to 6 feet through being plentiful; the remainder of the distance being good feeding-grounds.

"The next day started north and traveled in that direction for about 9 miles and found good pasturage on east side most of the way, and wild flowers and berries grew in places; the west side of river is barren and very perpendicular in several places. I then traveled to west and for a short distance on a small river found some feed, but after traveling for 1 mile I retraced my steps and went to northeast for about 3 miles; when men began to complain of being tired and I ordered a halt for the night on a small stream running toward the east. To northeast I saw good indications of feed.

"The next morning I got an early start, taking with me the guide and herder and leaving the others behind to try and find a place to camp that night, having to go without fire the previous night and this morning. I crossed the small river and traveled north; for the first 2 miles there was but a small quantity of feed, having passed over some very rocky ground. The next $3\frac{1}{2}$ miles there is good pasturage, being plenty of grass and considerable moss. I crossed two small streams in this course. Traveled east to get around some large hills; at about one-half mile came to a large mound of slaty rock—mound about 30 feet high and 150 feet across. For 1 mile east found good pasture; crossed a small stream running southeast. Changed to north and for 1 mile found good grazing ground; halted at a large cluster of rock for lunch and shelter from rain; found a white surface on one of the rocks, and I made the following inscription:

"'B. Gibson, July 29, 1892, 12 m., from Reindeer Station.' Resumed march to north and for 2 miles found good pasturage; crossed a small stream running to south. About 1 mile south is a lake. Changed course to east for 3 miles, crossed one stream, and found good feed in abundance. The land was of a rocky nature. Started to return to camp and traveled southwest for 7 miles to where I gave orders for camp to be located, but found they had gone farther east. I crossed over good feeding ground of a boggy nature, similar to that surrounding station. The herder said it was the best seen since starting on expedition; it was mostly lowland and some low rock hills. I found the camp 2 miles east of where I expected it to be.

"The fourth day I started east and traveled for 4 miles over low hills, the surface being of a broken nature and containing abundance of feed; coming to high hills, changed course to southeast for $2\frac{1}{2}$ miles, finding fair pasturage and ground slightly rocky. Sent packers on to river to find suitable camping grounds for night. I traveled 5 miles to northeast, finding good pasturage of a boggy nature; crossed one small stream. Changed to southeast 1 mile and south 1 mile, finding good pasturage on low hills; changed to southwest over low, hilly, and rocky land in some places slightly boggy; the feed on this last course was abundant and of a good quality.

"*Fifth day.*—It stormed hard last night and blew the tent down about 3 o'clock. I broke camp about 7 o'clock and started for the station, taking a southwest course. After traveling for about 5 miles I crossed a small stream running very rapidly toward the northeast. The land was low hills and furnished abundance of feed. I traveled 2 miles farther in same direction and crossed a large stream with swift current and running northeast; the feed and land the same as passed earlier in the day. Continuing in same direction, but a little more to west for 4 miles I traveled over low hills; good pasturage and plenty of moss. I crossed large hill to north of station; found it barren and very high and rocky. It is about 1 mile from bottom of hill to open land, and from there on to station is good grazing land. I arrived at station at 4:15 in the afternoon. It had stormed hard from the time I left until my return, raining and blowing hard.

"In closing, I will say the herder told me the ground passed over was very good and equaled and in places excelled the pasturage in Siberia; he further stated that the pasturage surrounding station was sufficient for a year, providing that in the winter there was not over 1 foot of snow nor over $1\frac{1}{2}$ inches of icy crust on top. If the ice comes first and the snow later, it is impossible for the deer to dig out the feed.

"I noticed in my travels that the feed was on low hills and lowlands, the high hills being barren.

"The guide, Charley, said that for a long distance into the interior the low-

lands were the same as passed over, thus showing that, should it be necessary to go to the interior this winter, there will surely be plenty of feed for the reindeer."

Very respectfully,

MINER W. BRUCE,
Teacher.

Rev. SHELDON JACKSON,
General Agent of Education in Alaska.

APPENDIX G.

RECONNOISSANCE EAST OF PORT CLARENCE, BY MINER W. BRUCE.

REINDEER STATION, PORT CLARENCE, ALASKA,
August 19, 1892.

SIR: In your letter of instructions for the government of this station, dated July 4, ultimo, you suggest, among other things, that two expeditions be sent out for the purpose of ascertaining the prospects for winter grazing for the reindeer, should the country in this immediate vicinity become covered with ice or deep snow, thus preventing the deer from pawing through it for food.

One route designated by you was to the north for the station, in the direction of Kotzebue Sound; and in accordance with your instructions Mr. Gibson, on the 27th ultimo, made a trip in that direction, lasting four days and a half, the result of which I communicated to you officially on the 2d day of the present month.

On the 3d instant I started on a trip to the northeast, with an oomeak and seven natives, expecting, if my health permitted, to be gone ten days or two weeks.

Our route lay through Grantley Harbor into Imnrock Lake, and having a fair wind, we made a splendid day's sail, taking us about half way through the lake, and camping the first night on the west side.

I wish especially to call your attention to the route from Grantley Harbor into Imnrock Lake, as it affords, in the event of severe storms, unusual shelter for the deer.

A narrow passage, probably 6 miles in length, connects these two beautiful bodies of water, and as it winds its zigzag course along the line of bluffs on each side, which commence immediately on leaving Grantley Harbor, is unbroken until Imnrock Lake is reached. The passage seems to be of nearly an uniform width, and will not exceed, at its widest part, one quarter of a mile. The bluffs on both sides are about 200 feet high, and there appears to be water sufficient to float an ocean vessel.

At several places along the route I left the oomeak, and with the Siberian herder went to the top of the bluff and found the country to the north a gently undulating table-land, and with my glasses I could see that for several miles this character of country did not seem to change.

On the south side the same aspect of country appeared, but 4 or 5 miles to the south the country became more broken, and took in what appeared to be low mountains.

The whole surface of the country on both sides was covered with a luxuriant growth of low bushes, occasional patches of grass, having the appearance of blue joint, and what was certainly red-top grass and mosses.

Even on this table-land the surface of the country was very uneven, being in places hummocky, and the little spots between seemed to be marshy and often filled with water.

The Siberian herder seemed much pleased with the character of the feed, and frequently pointed out the different kinds of grasses or shrubbery that the deer were fond of, and always designated the moss as choice winter grazing.

From the natives in my party I learned that the snow in this passage does not reach a depth of over one foot, and usually less; also, that when one side of the passage is covered with snow, the other is lightly covered. If this be true, it would appear that the deer, if it becomes necessary to move them from the station, can find good grazing either one side or the other of the passage; and in severe storms a refuge may be had behind the high walls of the bluffs.

On the morning following our first day's sail I took the herder to the top of the hill just back of our camp. It is probably four or five hundred feet high and runs out to a point into Imnrock Lake. From its top a splendid view of the country in every direction is had. The general contour, as far as I could see, was the same as that observed from the bluffs along the narrow passage. My position commanded a view to the northwest, north, and northeast, and for a distance of 25 miles at least the same character of country prevailed. As far as the eye could reach not a mountain was visible and not a speck of snow was seen.

To the west there were several miles of what appeared to be a marsh, or a very low land, covered with little patches of water back from the lake. These gradually disappeared in the north, where the land became higher and of the same general character I found farther to the south.

From my position I could see the faint outline of the north end of the lake, probably 12 or 15 miles away, and I thought I could discern the winding course of a river coursing through the table-lands to the north, and if so, it was probably the Agee-ee-puk River.

On the sides and top of the hill from which I was making my observations there was a thick growth of the same kind of grasses and shrubbery found the day before. I was surprised to find along the route to the top of the hill patches of low willow and elder bushes, from the branches of which twittered and flitted small birds, and every few paces we advanced aroused ptarmigan in large numbers.

There was nothing in the appearance of the country, so far as I could see, that would suggest anything like what one would expect to find bordering on the Arctic circle. On the contrary, the vegetation, much of it, was such as is found in temperate climates, and the birds and insects of the same variety that abound in country where the mercury never ranges lower than zero.

From my position on the top of the hill I could see what appeared to be a break in the range of mountains on the south side of the lake, and as the wind was blowing from the north, thus preventing farther advance in the present state of the weather, I concluded to sail to the other side and investigate the country in that direction.

The distance across was about 4 miles, but the wind died out when about half way across, and we were compelled to paddle the rest of the way, a very slow process of travel in an oomeak.

On reaching shore we went into camp, and after dinner I started with the natives for the mountains. My purpose was to simply get an idea of the country between the shore of the lake and the foot of the mountains that day, and take all of the next for determining the extent of the pass.

All the afternoon we traversed the lowlands towards the mountains and found the same general growth of vegetation as that found before. It could not well be of thicker growth or to all appearances more nutritious. If anything there was more moss, and perhaps the low bushes hung fuller with blueberries than any found before. There were several small mountain streams leading across to the lake, and if they were supplied from melting snow it was far up or hidden between narrow gorges, as none were seen from where we traveled.

It was after 6 o'clock when we returned to camp, and before retiring the natives understood that on the morrow we were going to try to find a passage into the interior.

Accordingly, by 7 o'clock we were ready to begin our tramp. We took with us an ax, spade, field glass, and two hard-tack apiece. Our course lay across the lowlands towards what appeared to be a break in the mountains, and it was at least 7 miles from camp across to the entrance. Part of the distance lay over comparatively smooth land, and a considerable portion over hummocky ground. There did not appear to be any difference in the thickness of the vegetation or the variety in these two different surfaces, but the rough ground was the most tedious I have ever attempted to travel over. The little ridges or hummocks are too wide to step over, and too shaky to stand upon, so that our trip over this section was a series of ups and downs, mostly the latter.

At our stops for rest I had holes dug with the spade and was surprised to find a black, sandy soil, from 1 foot to 3 feet deep, in nearly every instance. Sometimes we could not dig more than a few inches on account of encountering stone or slabs of rock, but this was not the rule. I thought I discovered the secret of such a heavy and luxuriant vegetation here, from the rich class of the soil and the abundance of water.

In our way towards the break we passed through two groves of elder and willow trees that were dense, of from 2 to 4 inches in diameter near the butt and

from 10 to 15 feet high. It was evident that a little grubbing and thinning out would have improved the size of these trees materially.

Our journey up the side of the mountain near what appeared to be a pass was a tedious one, for the nature of the ground was more or less hummocky. I find that this class of land is as liable to occur on high or table land as upon low and marshy ground.

It became apparent as we ascended the mountain that the break or pass which appeared to extend through the range was a false one, and when near the top it appeared to be a sort of blow-out which came to an abrupt perpendicular at the end of a sudden break ahead. From the top of the mountain we had ascended, although not the highest by considerable, we could see that the country to the south was a succession of mountains of perhaps 2,000 or 3,000 feet high, and that there was no pass into the interior unless following the course of some river.

Accordingly, we commenced our descent about 2 o'clock, and varied our course somewhat. It took us farther to the east along the base of the mountains and then straight to camp.

On our way back we passed over a section of country that was a complete bed of moss. We could rake it up in armfuls, and in a few minutes, during a spell of rest, we gathered sufficient to feed, as our Siberian herder declared, our whole herd of about 150 head of deer for one day.

If his estimate was correct, I feel assured that in this particular section a half-dozen men with hand rakes and pitchforks could, in one week, gather enough to feed our herd the coming winter.

At different times during the day, as had occurred during the day before, the Siberian herder gave me to understand that a trip in search of winter grazing was a useless expenditure of time; that what might appear to be good feeding ground now, when winter set in might be covered with a thick crust of ice or deep snow; that nothing could be told from the lay of the land whether feed could be gotten at by the deer or not; that a locality which was all that could be desired this winter would be totally inaccessible next; that it was the practice on the Siberian side to select what appeared to be a good section for winter grazing, and if it became covered with thick ice or deep snow, to move the deer to some locality where feed could be had.

This was the same information Mr. Gibson had gathered from our chief Siberian herder, whom he had with him, and I partly resolved, if the wind was not favorable for moving north the following morning, to retrace my steps and return to the station.

I had left rather against my judgment, for my work of late had told on me and I needed rest. On my return to camp that evening I was completely worn out, and during the night experienced a slight chill.

The morning broke rainy, and I was feeling miserably. The judgment of the Siberian that it was a useless trip was a strong argument in my present condition, and when, an hour later, a strong north wind settled the matter of progress towards the north against us, at least for that day, but was a fair wind for the station, I ordered everything packed, and, after about fourteen hours' sail, reached the station.

As we must in a considerable measure depend upon the judgment of the four Siberian herders, who have spent all their lives in the rearing and care of reindeer, it seems to me that in the present state of affairs at the station, with so much to do and so little time before cold weather will set in, when the presence of myself and Mr. Gibson is required, further exploration in search of winter feed ought to be abandoned, or at least postponed until later in the fall.

From this view of the matter, I would respectfully ask a modification of your instructions upon this point.

I have the honor to be, very respectfully,

MINER W. BRUCE,
Teacher.

Rev. SHELDON JACKSON,
General Agent of Education in Alaska, Washington, D. C.

APPENDIX H.

INSTRUCTIONS FOR GUIDANCE OF REINDEER STATION.

ON BOARD U. S. REVENUE MARINE STEAMER BEAR,
At anchor off Port Clarence, July 4, 1892.

SIR: During the months of August and September, 1891, I purchased in Siberia and landed (September 21) at Unalaska sixteen domestic reindeer. Having no herder to take charge of them, I turned them loose on the small island of Anak-nak, where they successfully wintered.

The landing this morning at this station from the U. S. Revenue Marine steamer *Bear* (Capt. Michael A. Healey, commander) of a band of fifty-three domesticated reindeer from South Head, Siberia, together with four herders, marks the establishment of the first herd of the kind in Alaska.

This is an event of far more than ordinary importance. If successful, it will create throughout northern and central Alaska a new food supply in place of the whale, the walrus, and the fur-bearing animals that are yearly becoming scarcer and more difficult to obtain.

Furnished a better and surer food supply, the native population, now decreasing in numbers, may reasonably be expected to increase.

Changing them from mere hunters to herdsman, it will be the first upward step in their civilization.

With the increase in civilization of the natives and the general introduction of domestic reindeer, the vast, bleak, frigid, and now comparatively useless plains of Arctic Alaska will be reclaimed and become a source of wealth and prosperity to the land.

The realization of this desirable condition of things is largely in your hands. The friends of the movement and the National Government, which has been asked to extend it, will be encouraged to go forward or led to withdraw from further effort as the herd now intrusted to your care prospers or comes to naught.

With so much at stake, you will make the care and welfare of the herd your first and most constant care. Everything else is of secondary importance.

WINTER GRAZING.

The most trying season will be next winter, when the food that now abounds everywhere will be largely covered up with snow and ice. In Siberia I am informed that the winter grazing is sometimes from 100 to 150 miles away from the summer grounds, the herd being driven back and forth spring and fall.

It is essential, then, that you take early steps to find a good location for winter. To this end I would advise that as soon as your house is inclosed you take Charley and the most experienced of the Siberian herders and make a thorough exploration of the surrounding country. I would make one trip through Grantly Harbor, Yoks-hook River, Imrock Lake, to the headwaters of Agee-ee-puk and Cov-vee-arak rivers; also, on the trail from Grantly Harbor towards Unala Kleet and St. Michael. I would also advise a trip into and through the mountains north of the station. Charley will be a good guide, and perhaps the Siberian will know by the lay and general appearance of the land the most suitable place to winter.

I feel great solicitude with regard to this. A mistake may result in the loss of our herd by starvation. The natives around Port Clarence affirm that, while there is not much snow on the plains between the hills and the sea, yet it is covered with a hard, icy crust which the deer can not break through for food. They further say that, years ago, when the wild reindeer frequented the coast, they were only found in summer—that in winter they migrated towards Norton Sound.

It may prove that the winter grazing grounds that shall be selected may be too far away; that it will become necessary to close up for the winter the present house and establish temporary headquarters in the vicinity of the deer. If this necessity arises, I would suggest that you build a log house (if in a timber country) or a dugout for winter use.

PROTECTION FROM DOGS.

Another danger to the herd arises from the attacks of strange dogs. You will, therefore, require one of the herders on watch to be armed, and instruct

him to shoot down any dog attacking the herd and report the same to you for settlement. When a dog is thus killed you will send for the owner, explain to him the necessity for the step, express your regret at his loss, and then make suitable payment for the dog.

When any visiting natives come into your neighborhood have them notified at once that they must keep their dogs tied up. Deal firmly, justly, kindly, and patiently with the natives, and thus secure their good will.

Once a month you will count the herd, and if any are missing or have been killed note it down, with cause (if known), and reportsame with all the circumstances to the Bureau of Education.

If any exigency arises by which it becomes necessary to kill a deer for food, you will first use any surplus among the geldings, and after that from among the bulls. None are to be killed, however, except in cases of extreme necessity.

HERDERS.

The herders consist of two classes :

1. Experienced men from Siberia.
2. Native Alaskans who may wish to learn the management and care of reindeer.

The Siberians, being away from their friends and among a strange, selfish, and at times jealous and suspicious people, need your special care and protection. Take pains to make them feel that you have a fatherly interest in them. I hope their treatment will be such that they will choose to remain with us permanently.

The second class should be picked young men (one or two from a settlement), who are expected to take a two-years training in the care of the herd and thus become fitted to take charge of future herds in the neighborhood of their own homes. At the close of their two-years course, if they have been faithful to their duties and mastered the business, it is proposed to give them the deer as their start in life. This class will need constant watching. Anyone persistently refusing to obey necessary rules, shirking his duties on watch, or otherwise showing a want of interest in this work, or anyone that proves too dull to learn is to be dismissed from the service and sent away from the station.

The second class are to be subdivided into classes corresponding with the number in the first class.

For instance, if you should have twelve in the second class, and, as now, four in the first class, you will place three of the second class under the tuition and oversight of each of the four of the first class; and whenever he goes on watch they shall accompany him and be subject to his direction. It will then, as a general rule, be necessary for only one of the Siberians to be with the herd at a time. In case of sickness of one of the Siberians his pupils will be assigned duty with the others until the sick one recovers and returns to duty.

After conference with the Siberians you will be able to systematize the hours of watch. In this I would defer largely to the method pursued in Siberia.

When the seasons of watch are determined upon you will see that each watch promptly relieves the preceding one at the proper time.

The herders of both classes are to be housed, clothed, fed, and cared for at the expense of the station.

SHELTER.

At the home station, when off duty, have the herders construct comfortable dugouts for their own use. If you can spare the large dugout already commenced that can be turned over to the herders.

If it becomes necessary to have the herd a large distance off, buy some walrus hides for a covering, and let the herders make a small tent that can be moved from place to place.

You will make an inspection of the dugouts every Saturday, and require them to be kept as cleanly as possible. Allow no slops or offal to be thrown upon the ground near the door.

SUPPLIES.

You will furnish them with the necessary iron teakettles and pots for cooking. They are expected to procure driftwood for fuel. You will also furnish them a sufficiency of reindeer skins for bedding. These supplies are Government property, and are to be carried upon the inventory list.

CLOTHING.

You will supply them with comfortable native fur clothing, according to the season.

If the supplies I leave with you for this year are not sufficient, you will employ some of the native women to make more. As the reindeer clothing can be purchased ready made in Siberia cheaper than made in Alaska, you will make out at each season a list of garments needed and respectfully request the commanding officer of the revenue cutter to have them purchased for you. For this you will furnish him sufficient barter from the reindeer trade goods.

Once a month you will inventory all bedding, clothing, cooking utensils, and other Government property used by the herders.

Twice a month, if the weather is suitable, all bedding should be hung out to air and sun upon a line erected for the purpose.

Herders of the second class need special watching that they do not give or sell their clothes, bedding, or other Government property to their friends.

FOOD.

Flour, corn meal, pilot bread, beans, and tea will be sent from San Francisco. It is best, however, as far as possible, to preserve their native diet. You will therefore purchase supplies of oil, dried and fresh fish, etc.

As soon as you can determine it fix upon a regular ration, which you can issue daily or at regular intervals as experience shall show to be best.

Outsiders or friends are not to be allowed to gather in and eat with the herders. Nor shall the herders be allowed to give them food. If any food is to be given away it must be done by the superintendent or his assistant, and an account kept of the same, giving date, approximate amount, and number of recipients. You will encourage the herders when off duty to trap for rabbits and foxes both for fur and food.

When any garment, bedding, skin, or other property (except food) is issued to a herder or his wife, charge it against him in a book kept for the purpose. This will be a check against wastefulness, prevent any one receiving more or less than his share, and enable us to keep an account of the expense of training each individual.

WIVES.

If any of the herders shall be married and have their wives with them, you can issue a ration and clothing also to the wife, requiring from her in return some sewing or cooking for the herders. If there are several women you can apportion the work among them.

SCHOOL.

If circumstances permit, you will gather the herders that are off duty, and such others as may wish to attend, into the schoolroom for two or three hours daily (except Saturday and Sunday) and drill them in elementary reading, arithmetic, and writing. Special emphasis will be given, both in and out of school, to the use of the English language.

FUEL.

As far as possible you will procure and use driftwood for fuel at the station. The coal is to be reserved for keeping a fire through the night and for seasons when you may be unable to secure driftwood.

MORALS.

It is scarcely necessary to write that you will allow no liquor, gambling, profanity, or immorality at the station or among the herders.

You will allow no barter or unnecessary work at the station on Sunday.

You or your assistant must always be at the station. Both of you must not be absent at the same time. If the station is temporarily removed to the winter grazing grounds then that for the time being becomes headquarters.

REPORTS.

1. You will keep a log book or brief daily journal of events at the station, extending from July 1 of each year to the following June 30. This book is to be mailed to the Bureau of Education.

2. You will keep in a book furnished you an itemized statement of all barter for supplies for the station, giving date of transaction, name and quantity of article purchased, and articles and quantities of each given in exchange. A copy of this statement will be annually forwarded to the United States Bureau of Education.

3. On the last day of March, June, September, and December of each year you will make out an inventory of all stores and public property in your possession, including bedding and cooking utensils in use by the herders. This does not include the clothing issued to and in use by the herders.

A copy of these reports will be forwarded by the annual mail to the United States Bureau of Education.

4. On the last day of June each year you will make out and mail to the United States Bureau of Education an annual report of operations at the station. In this report you will embody any recommendations that your experience may suggest for the benefit of the station.

5. On the 1st of August each year you will make a requisition for supplies for the following year.

As the work is new and untried, much must necessarily be left to your discretion and good judgment.

Wishing you great success, I remain

Yours truly,

SHELDON JACKSON,
General Agent.

Mr. MINER W. BRUCE,

Superintendent of Reindeer Station, Port Clarence, Alaska.

APPENDIX J.

DOMESTIC REINDEER IN LAPLAND.

[From Du Chaillu's *Land of the Midnight Sun*, vol 2, pp. 167 and 168.]

The Fjeld Lapp's time is engaged in adding to his herd, to which he and his family devote all their energies, for their welfare depends on the growth of the animals. It is difficult to ascertain exactly the increase or decrease of reindeer according to the districts, for the people often change, and there has been of late years in the North a large immigration of Norwegian Lapps to the territory of Sweden, especially to Keresuando, but, taken as a whole, the population and the reindeer are increasing. There is a greater number in Norway than in Sweden, owing to the number of stationary bönder (farmer) and sea Lapps which far outnumber the nomads.

According to the late census there are in Sweden (1870) 6,702 Laplanders, with 220,800 reindeer; in Norway (1865) 17,178 Laplanders, with 101,768 reindeer; in Finland (1865) 615 Laplanders, with 40,200 reindeer; in Russia (1859) 2,207 Laplanders, with 4,200 reindeer.

With those that belong to farmers and others I think we may safely say that the reindeer number about 400,000. The Samöides have the largest and finest breeds which are not numbered among those of the Lapps. In Kautokeino there are Lapps who own 2,000 reindeer; in Sorsele, in Sweden, one is said to own 5,000, and others 1,000 and 2,000. Some of the forest Lapps have 1,000. In Lulea Lappmark there are herds of over 2,000; in Finmarken, of 5,000; and some Lapps have owned as many as 10,000. A herd of 2,000 to 2,500 is said to give about 200 to 250 calves yearly.

Every owner has his own mark branded upon the ears of all his reindeers, and no other person has a right to have the same, as this is the lawful proof of ownership; otherwise, when several herds are mingled on the mountains, the separation would be impossible. According to custom no one can make a new mark but must buy that of an extinct herd; if these are scarce the price paid to the families that own them is often high; the name of the purchaser and each mark have to be recorded in court, like those of any other owner and property. The tax paid is according to the pasture land occupied.

APPENDIX K.

U. S. REVENUE STEAMER BEAR,
San Francisco, Cal., December 6, 1890.

DEAR SIR: Under orders from the Secretary of the Treasury, I have been ten years on the Bering Sea and Arctic Ocean station of the U. S. Revenue Marine Service.

My duties have brought me very closely in contact with and greatly interested me in the native population.

On account of this interest, I have watched with pleasure the coming among them of the missionaries of the several churches and the teachers of the Government schools.

I have also seen with apprehension the gradual exhaustion of the native food supply.

From time immemorial they have lived principally on the whale, seal, walrus, salmon, and wild reindeer. But in the persistent hunt of white men for the whale and walrus, the latter has largely disappeared, and the former been driven beyond the reach of the natives. The white men are also erecting canneries on their best fishing streams, and the usual supply of fish is being cut off; and with the advent of improved firearms the wild reindeer are migrating farther and farther away.

With the disappearance of the whale, walrus, salmon, and reindeer, a very large portion of their food supply is taken away, and starvation and gradual extinction appear in the near future.

On my recent cruise I was accompanied by Dr. Sheldon Jackson, United States General Agent of Education, and together we have made the question of a future food supply the subject of special thought and investigation.

We have consulted with a few of the leading teachers, missionaries, traders, and whaling captains whom we have met, and they, without a single exception, agree with us that the most practical relief is the introduction of domesticated reindeer into that portion of Northern and Arctic Alaska adapted to them.

In Lapland there are 400,000 domesticated reindeer, sustaining a population of 27,000. In Siberia, but a few miles from Alaska, with climate and country of similar conditions, are tens of thousands of tame reindeer supporting thousands of people, and it will be a very easy and comparatively cheap matter to introduce the tame reindeer of Siberia into Alaska and teach the natives the care and management of them.

This it is proposed to do in connection with the industrial schools established among the natives by the Bureau of Education. As in connection with the industrial schools in Dakota, Indian Territory, and elsewhere, the Indian boy is taught the raising of stock, so in the industrial schools of Alaska it is proposed to teach the Eskimo young men the raising of tame reindeer.

A few thousand dollars expended now in the establishment of this new industry will save hundreds of thousands hereafter. For if the time comes when the Government will be compelled to feed these Eskimo it will cost over \$1,000,000.

In Northern Alaska there are about 400,000 square miles that are adapted to the reindeer and are unfit for anything else.

This region has a present population of about 20,000, all of whom will be ultimately benefited by the new industry.

With an assured support, such as will come from herds of tame reindeer, there is no reason why the present population shall not be increased in numbers and advanced to the position of civilized, wealth-producing American citizens.

Asking for your favorable consideration and earnest advocacy of this matter.

I remain, very respectfully,

M. A. HEALY,
Captain, U. S. Revenue Marine.

Hon. W. F. HARRIS, LL.D.,
U. S. Commissioner of Education, Washington, D. C.

DESTITUTION AMONG THE ALASKA ESKIMO.

[An interview with Capt. M. A. Healy, U. S. Revenue Marine Service, in *San Francisco Chronicle*, December 12, 1890.]

For several seasons past the Eskimo of Northwestern Alaska have experienced great hardships in obtaining a supply of deer meat for their winter stores. It is to be feared that when the *Bear* makes her annual visit to the Arctic next

summer many of the villages will be found to have lost their residents from starvation. The latest advices from the Arctic report a failure not only in the autumn deer hunt, but in the entire catch of whales, walrus, and seals.

Naturally of a timid disposition the deer have learned that the natives with breech-loading arms are far more formidable foes than when bows, arrows, and spears were employed in the chase. Again, the Eskimo spare neither young nor old when a herd is found, and little suckling fawns, as well as does carrying young, fall victims to their guns.

Formerly on the lower Yukon around St. Michael, on Norton Sound, and in the country known as the Kotzebue Sound district, numbers of deer made yearly visits. Now it is rare to find that the natives living at these points have seen or tasted deer meat.

The Alaskan deer of the Arctic and sub-Arctic regions have been confounded with the reindeer of other localities, but while certainly belonging to the rangifer family, they are the true barren-ground caribou, differing from the upland caribou and domesticated reindeer of Lapland and Siberia in being smaller in body and horns. From July to September the instincts of the deer induce them to come from the interior to the seacoast to obtain rest and freedom from the tortures inflicted by the hordes of mosquitoes that infest the inland swamps, and also to get saline matter from the herbage and moss growing in proximity to the ocean. In September they commence their inland migration, and from July until the middle of October they are ruthlessly pursued by the natives. Some rest is afforded to the animals during the dark days that prevail in the Arctic zone from November until January, but as soon after the early part of February as the weather permits the food-seekers again take the field. The does have their young during April, and by a provision of nature the horns of the female only attain size during the time she is suckling the fawn and until it reaches such an age that it can feed—about two months.

When it is considered that a deer weighing on an average 125 pounds is consumed at a single sitting by five or six natives it may be readily perceived that the average returns of a successful hunting party must be large to feed a village.

During the past season in the Arctic the attention of Capt. Healy of the United States revenue steamer *Bear*, has been directed to a very pointed manner to the attainment of some method whereby the supply of deer for food and clothing purposes may be increased in Northwestern Alaska. This year, taking advantage of the presence on the *Bear* of Dr. Sheldon Jackson, United States Commissioner of Education for Alaska, the captain, in conjunction with Commissioner Jackson, intends to present to the Secretary of the Interior data upon the subject.

Within a radius of 100 miles inland from the shores of the ocean on the Siberian coast, from Cape Navarin to Plover Bay, there are a people known as deer men. They belong to the Chukchee tribe of Siberians, and are essentially a nomadic race, wandering from East Cape, on the northern coast, to Cape Navarin, southward. Accompanied by their herds of tame reindeer, aggregating in many instances thousands, they roam in search of food. These reindeer, while resembling the Alaskan species in the main, differ in the texture of their skins, the pelts being spotted brown and white, with a smooth surface. These deer men subsist mainly on the products of their herds, bartering the skins with the coast natives for tobacco, seal oil, walrus hides for their boot soles, and other minor commodities, such as powder, shot, lead, and flour. At Cape Navarin and East Cape, Siberia, they sometimes meet the whaling ships and sell them deer meat and skins for tobacco, etc.

Capt. Healy's ideas are to propose to the Government that he be empowered to purchase a number of these deer of both sexes and transport them on the *Bear* to some point on the Alaskan coast where moss and feed are plentiful. These deer are to form the nucleus of a herd, and from the yearly increase they can be distributed over other portions of the Northwest Territory. As the Alaskan Eskimo are not skilled in herding the deer, Capt. Healy intends, if permission be granted by the Government, to endeavor to enlist the services of some experienced Siberian natives to instruct them.

Unless some measures be adopted, as suggested by Capt. Healy, it is sure that a decade will witness the extermination of the people of our Arctic province on its northwest shores. The results of the active and unscrupulous chase of their pelagic food supplies by the whalers have already become evident; walrus are almost invisible on the ice floes within reach of the native hunters, while the flurried and galled whale makes its passage to the unknown regions of the Arctic Ocean at a speed which defies the natives to capture it.

The proposition of Capt. Healy will be communicated to the Washington authorities at an early date.

DESTRUCTION OF THE WHALES.

[From Baneroff's History of Alaska, pp. 668 and 669.]

Of whaling enterprise in the neighborhood of the Alaskan coast mention has already been made; but a few statements that will serve to explain the enormous decrease that has occurred in the catch within the last three decades may not be out of place.

Of the 600 or 700 American whalers that were fitted out for the season of 1857, at least one-half, including most of the larger vessels, were engaged in the north Pacific. The presence of so vast a fleet tended of course to exhaust the whaling-grounds or to drive the fish into other waters, for there are no permanent whaling-grounds on any portions of the globe except those encircled by ice for about ten months in the year. In the seas of Greenland, not many years ago, whales were rarely to be seen; in 1870 they were fairly plentiful. The sea of Okhotsk and the waters in the neighborhood of the Aleutian Islands were a few decades ago favorite hunting grounds but are now almost depleted, while in 1870 the coast of New Siberia was swarming with whales. Schools of sperm whale are occasionally seen between the Alaska peninsula and Prince William Sound, and the humpback sometimes makes its appearance as far north as Baranof Island. Between Bristol Bay and Bering Strait a fair catch is sometimes taken, but most of the vessels forming what is termed the north Pacific whaling fleet now pass into the Arctic Ocean in quest of their prey. Probably not more than 8 or 10 of them are employed on the whaling-grounds of the Alaskan coast.

In 1881 the whaling fleet of the north Pacific mustered only thirty and in the following year forty craft, of which four were steamers. The catch for 1881 was one of the most profitable that has occurred since the date of the transfer, being valued at \$1,139,000, or an average of about \$57,000 for each vessel, some of them returning with cargoes worth \$75,000 and few with cargoes worth less than \$30,000. In 1883 the catch was inconsiderable, several of the whalers returning "clean," and few making a profit for their owners.

The threatened destruction of these fisheries is a matter that seems to deserve some attention. In 1850, as will be remembered, it was estimated that 300 whaling vessels visited Alaskan waters and the Okhotsk and Bering seas. Two years later the value of the catch of the north Pacific fleet was more than \$14,000,000.

After 1852 it gradually decreased until in 1862 it was less than \$800,000; for 1867 the amount was about \$3,200,000; in 1881 it had again fallen to \$1,139,000, and for the season of 1883 there was a still further reduction.

SAN FRANCISCO, *December 18, 1890.*

DEAR SIR: Referring to your desire to obtain information relative to the introduction of reindeer into the northwest portion of the Territory of Alaska, I would say that in my opinion the project is entirely feasible. My experience in Alaska permits me to state on authority that the next decade will witness the extinction of the American reindeer, or rather caribou. In 1881, when I first visited the district of Norton and Kotzebue Sounds and the lower Yukon, deer were plentiful. This past winter (1889) not a single animal had been seen within a radius of 200 miles. Similar conditions are coexisting from Port Clarence to Point Barrow, and where in former years the hunters had to travel but 50 miles to reach the deer haunts, to-day they traverse twice that distance. These contingencies arise from three causes:

1. The indiscriminate slaughter of young and old animals.
2. The use at the present day of improved weapons of the chase, in lieu of the primitive bows, arrows, and spears.
3. The conditions of wind prevailing at the seasons when the deer go to and from the coast. It must distinctly be understood that upon a supply of these animals our Alaskan Eskimo depend for clothing as well as their stores of meat, should their pelagic sources of provender fall.

The proposition to introduce deer from the Siberian herds can be effected at a cost of but a few thousand dollars.

The location for the first experimental station should be on Choris Peninsula or the vicinity of Kotzebue Sound. This location has climatic similarities with Siberia. The food (moss) supply is abundant and herding easy.

As the results of this initial experiment become manifest, additional locations for herds can be established. Within two seasons the Chukchee herdsmen will be able to instruct the Eskimo in the style of herding.

I have made inquiries upon the subject and now give you the result. Ten years ago the Russian steamer *Alexander* went to the Kamchatka Peninsula, and officers of the Alaska Commercial Company bought seven male and seven female deer, transporting them to Bering Island (one of the islands leased by the company from Russia). Capts. Blair and Greenberg, and Superintendent Lubegoil inform me that the herd now numbers 180. From this you can judge the rate of propagation.

The revenue steamer *Bear* can be utilized for transportation, and I know no man more capable of conducting the experiment than Capt. Healy.

I hope that the small sum required will be voted by Congress, as unless something is done for these people their annihilation is only a question of a brief period.

The whalers have so frightened the big fish that the natives are unable to pursue them in their rapid passage, while the extermination of the walrus is almost a fact.

These remarks I present as requested.

Yours very truly,

HENRY D WOOLFE.

Dr. SHELDON JACKSON,
Washington, D. C.

WILD REINDEER IN ALASKA.

[Charles H. Townsend in the Report of the Cruise of the U. S. Revenue Marine Steamer *Corwin*, 1885, Capt. M. A. Healy, commanding, pp. 87 and 88.]

Reindeer are found more or less regularly throughout Alaska. They were found by Mr. McLenegan on the Noätak, as well as by our party on the Kowak. Traders in the service of the Alaska Commercial Company told me of their common distribution over the Yukon, Kuskokvim, and Aleutian divisions of the country. They have even been shot on Ounimak Island, at the end of the peninsula; but reindeer are restless animals, irregular in their migrations and habits. Sometimes they desert whole sections of the country for months together, and they appear to have withdrawn from many regions where firearms have been introduced. Notwithstanding the fact that large herds of reindeers are kept in a state of domestication by the Chukchees at East Cape and other well-known places on the Asiatic side of Bering Straits, with whom the natives of the Alaskan side communicate regularly, there appears to be no domestication of the species whatever in Alaska, nor indeed in any part of North America.

In time, when the general use of firearms by the natives of upper Alaska shall have reduced the numbers of this wary animal, the introduction of the tame variety, which is a substantial support to the people just across the straits, among our own thriftless, alcohol-bewitched Eskimos, would be a philanthropic movement, contributing more toward their amelioration than any system of schools or kindred charities. The native boats could never accomplish the importation, which would, however, present no difficulty to ordinary seagoing vessels. The taming of the American reindeer is impracticable, for domestication with this animal at least is the result of subjection through many generations. Something tending to render a wild people pastoral or agricultural ought to be the first step toward their advancement. In our management of these people, "purchased from the Russians," we have an opportunity to atone, in a measure, for a century of dishonorable treatment of the Indian.

REINDEER.

[From *Encyclopedia Britannica*, vol. 7, pp. 24 and 25.]

The reindeer (*Tarandus ranqifer*), the only domesticated species of deer, has a range somewhat similar to the elk, extending over the entire boreal region of both hemispheres, from Greenland and Spitzbergen in the north to New Bruns-

wick in the south. There are several well-marked varieties, differing greatly in size and in form of the antlers, the largest forms occurring farthest north, while by many writers the American reindeer, which has never been domesticated, is regarded as a distinct species. The antlers, which are long and branching, and considerably palmated, are present in both sexes, although in the female they are slender and less branched than in the males. In the latter they appear at a much earlier age than in any other species of deer, and Darwin conjectures that in this circumstance a key to their exceptional appearance in the female may be found. The reindeer has long been domesticated in Scandinavia, and is of indispensable importance to the Lapland race, to whom it serves at once as a substitute for the horse, cow, sheep, and goat. As a beast of burden it is capable of drawing a weight of 300 pounds, while its fleetness and endurance are still more remarkable. Harnessed to a sledge it will travel without difficulty 100 miles a day over the frozen snow, its broad and deeply cleft hoofs being admirably adapted for traveling over such a surface.

During summer the Lapland reindeer feeds chiefly on the young shoots of the willow and birch; and as this season migration to the coast seems necessary to the well-being of the species, the Laplander, with his family and herds, sojourns for several months in the neighborhood of the sea. In winter its food consists chiefly of the reindeer moss and other lichens, which it makes use of its hoofs in seeking for beneath the snow. The wild reindeer grows to a much greater size than the tame breed, but in Northern Europe the former are being gradually reduced through the natives entrapping and domesticating them. The tame breed found in Northern Asia is much larger than the Lapland form and is there used to ride on. There are two distinct varieties of the American reindeer, the barren-ground caribou and the woodland caribou. The former, which is larger and more widely distributed of the two, frequents in summer the shores of the Arctic Sea, retiring to the woods in autumn to feed on the tree and other lichens. The latter occupies a very limited tract of woodland country, and, unlike the barren-ground form, migrates southward in spring. The American reindeer travel in great herds, and, being both unsuspicious and curious, they fall ready victims to the bow and arrow or the cunning snare of the Indian, to whom their carcasses form the chief source of food, clothing, tents, and tools.

APPENDIX L.

Capt. M. A. Healy, in January, 1892, writing to Senator Charles N. Felton, says:

"The three great problems of existence of both natives and whites in the Territory of Alaska are food, clothing, and transportation. They are to be solved in a rigorous climate and rough and almost impenetrable country, and one in which nothing as yet is produced from the ground. The food supply must either be found in the flesh of the wild animals and birds of the country or brought from without. With the white population the food might be said to be brought wholly from without. The enormous expense this entails has kept this population down to the narrowest limit of employes of firms or companies capable of maintaining stations there and confined these stations to a few scattered well-known points along the immense stretch of seacoast or on some of the principal rivers as the Yukon.

"FOOD SUPPLY.

"The native population of the northwest part of the country depend for food upon whale, walrus, seal, fish, and what few wild animals, such as deer and caribou, they can kill. The whale and walrus have been so persistently pursued by white men that they have rapidly diminished and are now so scarce and shy that their capture by the natives is attended with great difficulty and uncertainty. This scarcity of their principal supply of food is greatly felt by the natives along the whole northwest coast and to such an extent that in the short space of winter whole villages have been wiped out.

"I have seen almost the entire population of St. Lawrence Island lying strawn about their huts dead from starvation. And this winter of 1891-'92 the same fate may be that of Kings Island. Upon my visit there in September last, the seal and walrus catch having failed them, the natives were reduced to the direst extremities. Their larders were exhausted and their only means of subsistence

their dogs and the kelp and carrion cast up by the tide. What supplies could be spared from the vessel and what bought at St. Michaels station were given the people, with the hope that it would tide them over until more successful hunting. But this hope is not without misgiving that upon my return in the spring I shall find many of them whom I count as friends cold in death. The interior natives are dependent wholly upon caribou and deer and what fish come into their streams during the short summer. Caribou and deer are rapidly diminishing there, as they have in other countries, and the fishing streams are being taken up by white men, so that the lines of existence are on all sides being drawn tighter and tighter about these poor native Alaskans.

REINDEER-SKIN CLOTHING.

"Clothing of reindeer skin has been found the best and only kind to withstand the intense and continued cold of the country. These skins are now bartered at a high price from the natives of the Siberian coast, and are passed along the Siberian side from village to village, increasing in value the farther they go from the Bering Straits. The experience of white men and natives has been the same, and even in our summer visits to the country we on the vessel use reindeer clothing to keep from suffering.

"The methods of transportation now in use in Alaska are by dog trains and boats. By boat it is impossible to travel nine months in the year, and during the three months of summer when the streams are open they can be used only down stream. By dog trains transportation is limited, slow, and uncertain, and the greater part of the load is taken up with food for the animals. These dogs have been so closely bred that they are now degenerated in size, strength, and sagacity. I have for years been requested by natives to bring them a larger breed to improve their dogs, and the Hudson Bay Company has imported the English mastiff for use in trains where the native dog is too slight.

"Among the whites the greatest difficulty experienced by miners, missionaries, explorers, and residents has been the want of a rapid and assured means of transportation. The history of every expedition that has penetrated into the country any distance from the coast has been one of suffering and oftentimes hunger from the difficulty of travel and packing. Horses, cattle, asses, and other beasts of burden, excepting tame reindeer, are out of the question because they can not live in the country, and it is impossible to provide food for them when snow covers the ground the larger part of the year. On account of this difficulty the country, except along the seacoast and a few of the navigable rivers, is as little known to-day as when it was first bought. And those great mineral deposits which Alaska is said to contain remain as yet undiscovered.

"WHAT THE REINDEER MIGHT DO.

"To my mind the only satisfactory solution of all three of these problems, important as they are, is the introduction of tame reindeer into the country. In proper numbers they will transform the native population from a fishing to a pastoral people, and prove to them a never-failing supply of food. The hides of the animals already furnish almost the only clothing used, but at a greatly exaggerated cost. And to the white explorers, miners, missionaries, and settlers the reindeer will prove a means of transportation and packing that will enable them to learn and develop the resources of a vast country.

"The natives of Siberia have for centuries herded and reared the tame reindeer, and thus been safe against periodical periods of starvation when the whale and walrus fail them. They are a strong, swift, and hardy animal, tractable, and easily broken to harness and packing, and especially adapted, or, in fact, made for the country and climate. In travel they are self-sustaining. The supply of moss upon which they feed covers the whole of northern Alaska, and instinct leads them to secure it in winter as well as summer by burrowing through the deepest snows. It is not necessary for us to speak of the value of such pack animals to the prospector. To the explorer they are equally valuable, and when supplies fail are equally valuable as food.

"If I may revert back to the days of the Western Union Telegraph expedition to that part of the country, where reindeer could be procured for drafting as well as for food, the thousand and one obstacles that at first seemed insurmountable were, through the medium of these animals, easily overcome.

"The natives of Alaska quite see the advantage of such an animal in their

midst, have expressed to me their eager wishes for them, and along the Yukon, the most thickly settled part of the country, the white people are enthusiastic over their introduction, for in them they see a solution of many of the difficulties of existence there.

"Horses and cattle have been tried in this section, but, on account of the unacclimated nature of the animals and the impossibility of feeding them in winter, with no success.

"THE SIBERIANS WILL SELL.

"Some writers and others have claimed that the Siberian natives will not sell reindeer to white men, but Dr. Jackson and I have disproved this by buying during the past summer, at different points on the Siberian coast, sixteen of the animals, and securing promises to sell us as many as we could take care of the coming summer, should they be wanted. The sixteen we purchased, the first ones to be introduced into the Territory, we placed at Unalaska for propagation.

"I believe this is the most important question that bears upon the Territory of Alaska to-day, and a small sum donated by Congress for the purpose will in the end develop the country, its character and resources, and prove a great benefit to the commerce and wealth of the United States in general and the Pacific coast in particular.

"I am referring not to the Alaska of the tourist—that narrow strip of island from the southernmost boundary to Sitka—but to that immense territory of 500,000 square miles of the north and west of which the world has no knowledge and no conception, and to which the Alaska of the tourist bears as much relation as the State of Florida does to the whole United States."

APPLICATION FOR A TEAM OF REINDEER.

FORTY MILE CREEK, *August 13, 1892.*

DEAR SIR: Capt. Peterson informs me that you would bring some reindeer, bought by the Government to distribute in Alaska. If you did get any and send me a pair, or, better, two cows and one bull, I will surely reward your trouble. I am doing freighting here in the winter with dogs, and reindeer would be far ahead of them. You could leave them in somebody's care in St. Michael for the winter, and have them sent up here in the spring. I will pay for all the expenses. If you did not get any this year for the Government, and you have a chance to buy some for me, I wish you would do it, and I will pay for them whatever, it is.

Respectfully,

Fritz KLOKE,
Forty Mile Creek, Alaska.

APPENDIX M.

COMMERCIAL VALUE OF REINDEER.

[N. Width, importer and commission merchant of Scandinavian products, 63 Broadway, room 29. Cable address, "Puncheon, New York."]

607 PENN MUTUAL BUILDING,
Philadelphia, Pa., April 16, 1892.

Dr. SHELDON JACKSON,
Bureau of Education, Washington:

I received your favor of the 14th and a pamphlet, which I have read with great interest. If reindeer can be imported in Alaska from Siberia and if there exists abundance of reindeer moss in Alaska, the facilities for realizing the plan are rather great.

Besides the advantages mentioned in the pamphlet, there exists one to which I want to call your attention—the great commercial importance.

To Sweden and Norway it is not only the Laplanders who live on reindeer; smoked reindeer meat and smoked tongues are sold everywhere in the said countries and the hides are in great demand, tanned to a soft skin (used for gloves, military riding trousers, etc.).

There are merchants in Stockholm the only trade of whom is in Lapland products, and the skins, dried with the hairs on, are exported by the thousands to Germany and England. I sold myself, 1878, about 5,000 such skins to a firm in Leipzig, Germany. The Norwegian Preserving Company use large quantities of reindeer meat for canning, and fresh it is considered a delicacy. Russia exports fresh reindeer meat, frozen, in carloads to Germany.

The price of smoked hams is in Sweden about 10 to 9 cents a pound; of smoked tongues, 8 to 10 cents apiece (or a pair, I can not exactly remember which); of dried hides, with hair on, \$1.25 to \$1.75 apiece, and more if they are not worm-bitten. The Swedish reindeer have mostly a kind of insect which lays its eggs in their skins; this causes holes which are seen in the skin when tanned, and diminish their value. The hairs are in great demand for the filling of life-saving apparatus (buoys, etc.), while they possess buoyancy in a wondrous degree. The best existing glue is made of reindeer horns. If I were sure of getting a trade in these articles and had the money, I would not consider it a moment, but go to Alaska at the first opportunity and make a fortune in ten years.

The number of reindeer killed for the trade (besides what the Laplanders use for themselves) is yearly 12,000 to 15,000 in Norway, probably 6,000 to 7,000, besides Sweden imports large quantities of meat and skins from Finland.

In 1881 I visited the fair in Nischni-Novgorod, Russia, and became there acquainted with a merchant from Nuhangel, who had brought to the fair 5,000 pair smoked tongues and 6,000 tanned skins (the tanned skins have a value of \$2 to \$3 apiece). A Swedish dragoon regiment wear trousers exclusively made of tanned reindeer skins (no other material permitted).

I think these facts might be of some interest. Capt. Healy says in his letter: "If the Government will be compelled to feed the Eskimo it will cost over \$1,000,000." If the Government realize the plan of domesticating reindeer, it would probably bring a good yearly income to the United States.

Yours respectfully,

N. WIDTH.

I should be very much pleased to learn later on how far the project succeeds and what steps the Government will take; if I move to Puget Sound next fall I shall probably make a trip to Alaska.

PHILADELPHIA, PA., *December 31, 1892.*

DEAR SIR: Your favor of the 29th received, and in answer beg to say, that I wrote to a friend in Norway about a book or pamphlet, as desired; I think, however, it would be easier to get such book from England, as probably some English tourist or other has written about the Laplanders, who always have been an object of great interest to tourists traveling in Norway.

The acclimatization of reindeer in Alaska would most certainly considerably increase the revenues from this province, as soon as some thousand deer could be yearly slaughtered and the hides and meat brought into the market. I believe I have written to you hereabout on a previous occasion; the tanned skins (soft and with a beautiful yellow color) would no doubt find a ready sale; in Sweden they are paid with seven to ten kr. (\$2 to \$2.75) and used for military pantaloons, gloves, bed-pillows, etc., and the hair, owing to its great buoyant quality, is much used for life-saving material. Russia sends frozen reindeer meat by carloads to Germany.

If I had capital, and if the climate in Alaska were not too severe, I would like very much to start such trade, in which I have some experience.

There is also another animal which would suit admirably for Alaska—the so-called "Thibetian ox," "yak," also "grunting ox" (probably while grunting as a hog). The animal has feet as a goat, well fitted for climbing rocks and stones; the cow gives an excellent milk which gives an excellent butter (the reindeer has not this merit); is used in Thibet also very much for transporting purposes. This ox, which is to the natives in Thibet what the reindeer is to Laplanders, is admirably qualified to sustain cold, seems even to love the cold, and to thrive best in cold and rough weather; it loves to throw itself in frozen lakes and rivers, to lie in snow and shady places, is always lying in the open air, has to seek its food for itself, only the herders have to take care to bring it down in the winter in the lower regions where the snow melts and the food is accessible.

In Thibet these animals are completely left to themselves; if taken some care

of they might multiply quicker and be much improved. They are seen in the zoölogical gardens in Europe, probably also in this country; might be shipped from Bombay or Calcutta, I presume. This animal might become by and by as abundant in Alaska as formerly were the buffalo on the Western prairies, and make Alaska a visiting place for sportsmen.

With my compliments for the new year, I remain, dear sir, yours, respectfully,
N. WIDTH.

Rev. SHELDON JACKSON,
Washington, D. C.

P. S.—As a proof of what man can do with a good will and good sense, even in the cold, inhospitable region, I wish to mention that in a place in Sweden, under 67° north latitude, where rich iron ores have been found and bought by an English company, a Swedish colonel and engineer in 1890 planted a grand park and garden, where all kinds of vegetables are growing, even rhubarb, asparagus, cauliflower, raspberries, straw berries, currants, large pine and birch trees. The park has an area of 2,800 to 3,000 square feet.

APPENDIX N.

THE CHAMBER OF COMMERCE OF SAN FRANCISCO,
San Francisco, January 20, 1891.

Resolved, That our delegation in Congress be requested to urge the passage of the joint resolution introduced December 19, 1890 (H. Res. 258), extending to Alaska the benefit of laws encouraging instruction in agriculture and the mechanic arts.

Adopted unanimously by the Chamber of Commerce of San Francisco this 20th day of January, A. D. 1891.

Attest :
[SEAL.]

THOS. J. HAYNES,
Secretary.

